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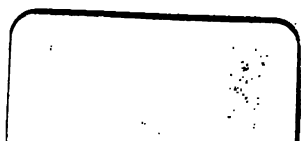
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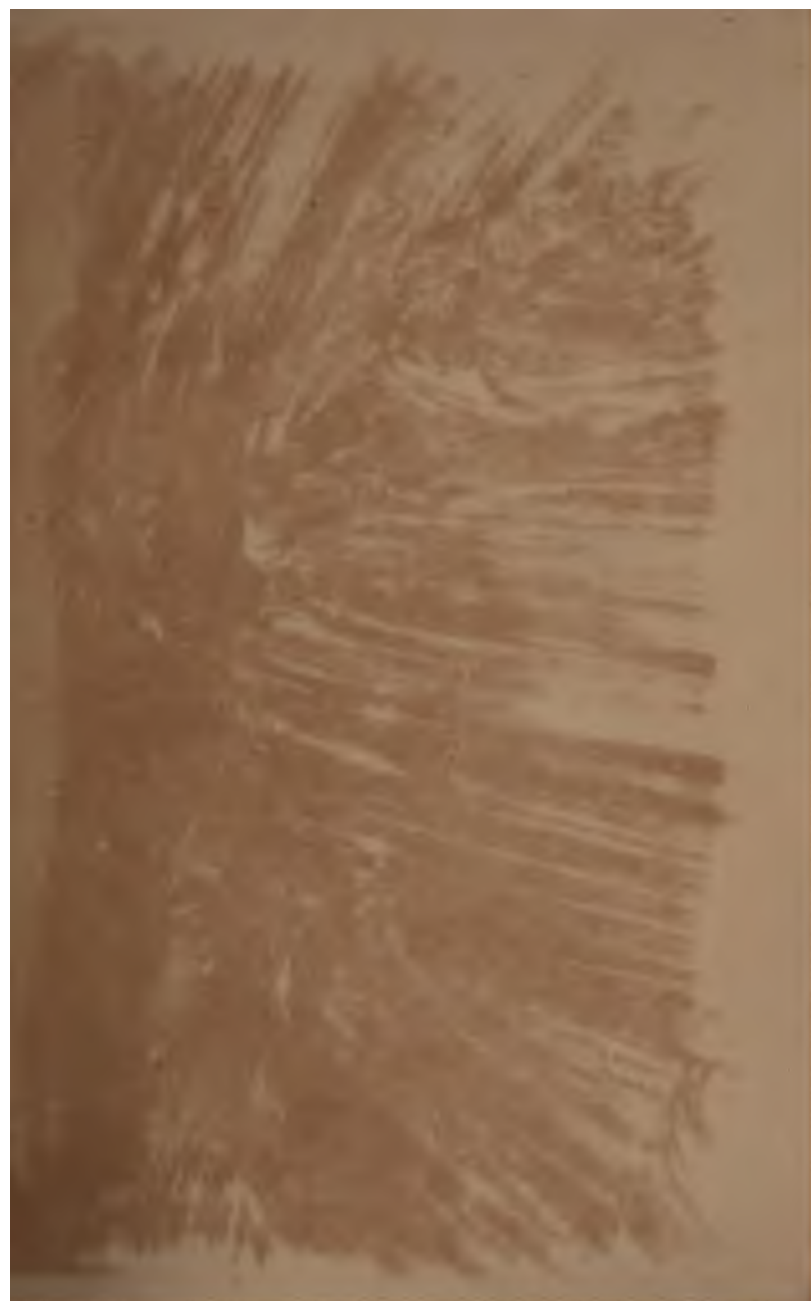
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HUGHES'S PRACTICAL COURSE
OF
ARITHMETIC.

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A
PRACTICAL COURSE
OF
ARITHMETIC
For YOUNG STUDENTS.

BY
JOSEPH HUGHES, F.R.G.S.,
Late Principal of Pomfret College, Pontefract;
Author of "Graduated Exercises in Arithmetic," "Easy Problems for
Young Thinkers," "A Series of Memory Cards," &c.

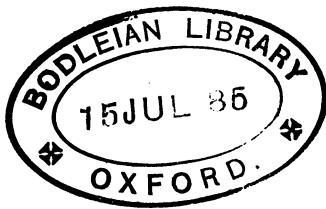
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1884.

1885. 3. 7.



P R E F A C E.

THIS little Manual aims at supplying young Students with a practical and graduated course of Arithmetic.

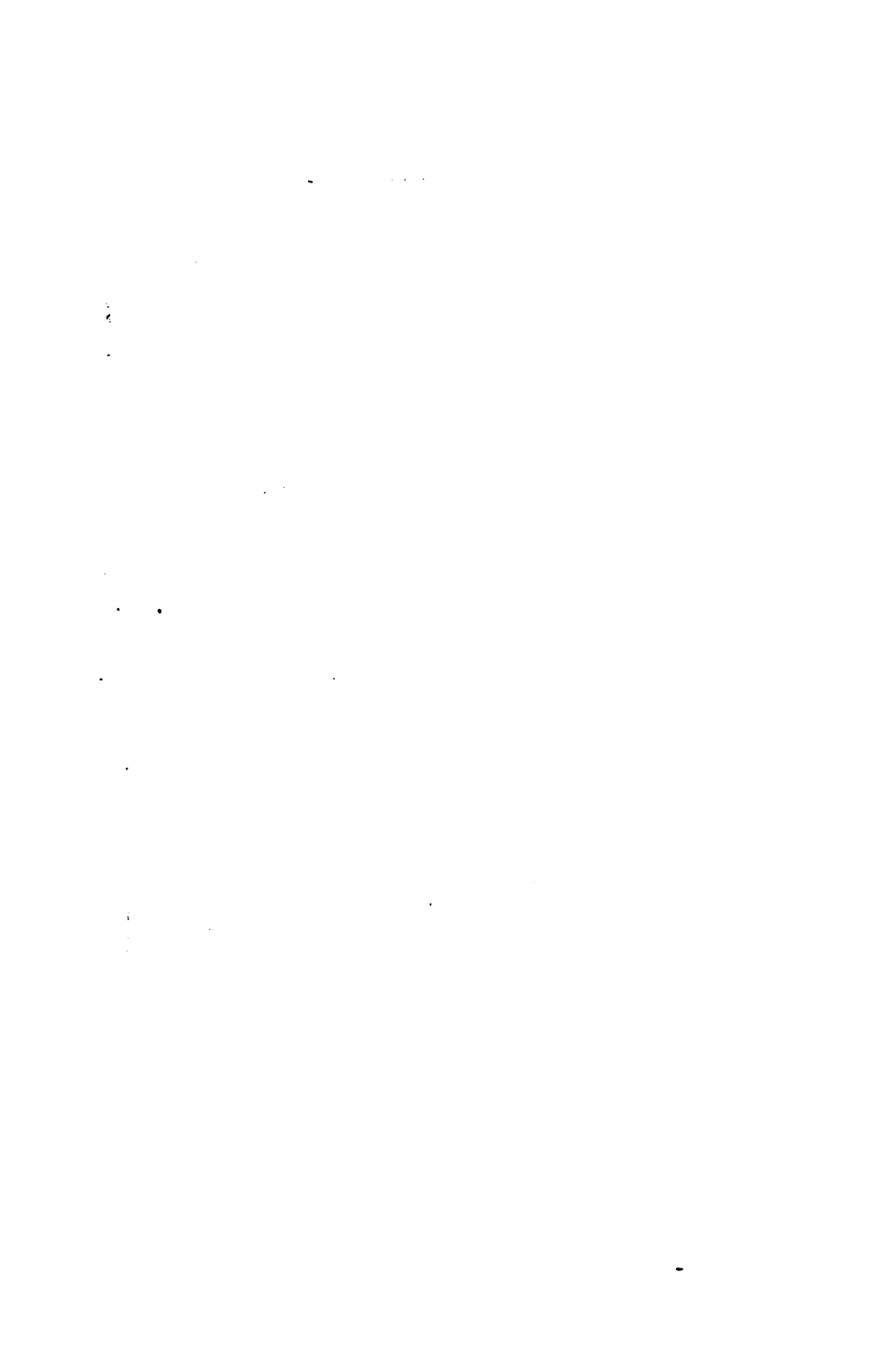
It is believed that the arrangement adopted will render copying well-nigh impossible. Any pupil who has carefully worked through these examples may with confidence be presented for Examination.

The author's best thanks are due to the Oxford Delegacy, the Cambridge Syndicate, and the Council of the College of Preceptors, for having kindly placed their Examination Papers at his disposal.

Numerous questions proposed by Her Majesty's Inspectors at various Government Examinations have also been inserted in the work.

Unusual care has been taken to secure the accuracy of the Answers. If, however, an error is detected, the author would esteem it a personal favour if any professional friend would communicate the same to the publisher.

*Upper Norwood, S.E.,
May 1st, 1884.*



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SIMPLE ADDITION.

Ex. 1.

A.	(1)	(2)	(3)	(4)	(5)	(6)	B.	(1)	(2)	(3)	(4)	(5)	(6)
	1	2	2	3	4	3		4	5	5	3	6	6
	2	1	3	2	3	5		5	4	3	6	5	6
	3	4	2	3	4	4		3	4	5	4	4	5
	2	3	4	4	2	2		4	6	6	5	6	4
	—	—	—	—	—	—		—	—	—	—	—	—

C.	(1)	(2)	(3)	(4)	(5)	(6)	D.	(1)	(2)	(3)	(4)	(5)	(6)
	4	5	7	8	6	8		3	4	7	8	9	9
	5	6	5	7	8	7		5	6	8	7	5	8
	6	7	6	4	7	6		7	9	8	6	9	6
	7	6	8	5	8	8		9	5	9	9	8	9
	—	—	—	—	—	—		—	—	—	—	—	—

E.	F.	G.
(1) 3+4+5+6	(1) 4+5+3+6+7	(1) 2+3+4+5+6+7
(2) 5+0+8+9	(2) 7+3+6+8+4	(2) 5+2+7+3+0+8
(3) 6+7+3+8	(3) 8+4+5+7+5	(3) 8+5+0+7+9+6
(4) 4+9+8+6	(4) 6+8+7+6+8	(4) 6+7+9+6+8+9
(5) 8+6+9+7	(5) 5+7+9+8+9	(5) 7+6+8+8+7+9
(6) 9+8+7+5	(6) 9+8+7+3+6	(6) 9+8+7+6+5+4

H.

- (1) Add up, two nuts, three nuts, five nuts, four nuts, and six nuts.
- (2) Add up, four tops, two tops, six tops, five tops, four tops.
- (3) Add up, six caps, four caps, five caps, three caps, and seven caps.
- (4) Add up, five pins, seven pins, six pins, eight pins, and three pins.
- (5) Add up, eight bats, five bats, seven bats, four bats, and nine bats.
- (6) Add up, nine pens, two pens, eight pens, six pens, five pens, and eight pens.

I.	(1)	(2)	(3)	(4)	(5)	J.	(1)	(2)	(3)	(4)	(5)
	24	32	45	50	64		57	86	79	37	87
	12	23	34	66	45		36	54	26	48	43
	30	14	26	33	56		45	97	73	94	28
	43	56	53	45	37		78	85	28	66	96
	54	25	62	27	23		27	39	85	75	54
	—	—	—	—	—		—	—	—	—	—

K.	(1)	(2)	(3)	(4)	(5)	L.	(1)	(2)	(3)	(4)	(5)
	76	35	43	8	43		57	48	75	89	75
	9	42	58	86	8		86	97	49	76	87
	35	3	16	4	79		73	66	86	93	99
	48	58	8	73	52		9	73	78	66	55
	7	77	7	15	67		85	59	97	59	47
	14	5	94	69	4		19	68	55	72	8
	—	—	—	—	—		—	—	—	—	—

EXAMPLE ANSWERS.

Ex. 2.

A. (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
237	346	562	674	755	394	838	726
423	475	709	365	667	720	759	354
546	808	27	746	444	59	466	273
728	654	653	229	353	8	983	897
654	787	68	50	909	697	267	482

B. (1)	(2)	(3)
386 + 127 + 438 + 527 + 73 + 889.	7908	5906
37 + 283 + 726 + 54 + 8 + 924.	4376	4258
532 + 258 + 607 + 3 + 74 + 287.	5909	7329
5 + 28 + 766 + 287 + 9 + 153.	3594	5473
920 + 706 + 690 + 29 + 16 + 727.	2943	6807
873 + 54 + 978 + 6 + 29 + 889.	5307	4565

- (4) How many in all are twenty guns, fifteen horses, forty-three dogs, nineteen men, and thirty boys
- (5) Find the sum of, 47 + 109 + 3076 + 8 + 473 + 90 + 4.
- (6) Add up, three houses, one hundred and five trees, seventy-nine eggs, two thousand hens, and eleven pigs.

D. (1)	(2)	(3)	(4)	(5)	(6)
6	42	4328	207	9	8279
384	507	6	5384	506	53
7	18	509	6798	28	9376
3463	8094	7380	529	3387	8
8205	659	97	3	878	937
8	1234	8928	8878	9393	7638

E. (1)	(2)	(3)	(4)	(5)	(6)
3258	4267	3210	5328	3877	4283
726	36	2854	8675	6063	6749
4387	7547	7386	4328	289	5397
94	862	537	96	68	7836
5637	3298	28	233	7685	4538
840	66	9876	1548	3926	9655

F. (1)	(2)	(3)	(4)	(5)	(6)
8267	4444	5328	8376	3333	9287
3548	2222	7296	5492	4444	3959
4236	5738	8737	6987	5555	4678
5377	6589	6549	2736	6666	8335
2658	3276	2180	8459	7777	9494
4569	4867	9276	9764	8888	6666

- G. (1) What is the sum of, thirty-seven, four hundred and twenty-six, nine, one thousand and two, and fifty-eight?
- (2) Find the amount of, five hundred and eight, two thousand and thirty, nineteen, seven hundred and eighty-six, and four.
- (3) Add together, forty-eight, three thousand two hundred and eighty-nine, five, six hundred and seventy-nine, twenty-six, and nine thousand eight hundred and seventy-one.
- (4) $286 + 14 + 9087 + 89 + 7 + 6983 + 4737 + 50$.
- (5) $2 + 309 + 5980 + 78 + 4768 + 9399 + 169$.
- (6) $3287 + 4288 + 729 + 4931 + 1234 + 9876$.

Ex. 3.

A.	(1)	(2)	(3)	(4)	(5)	(6)
	2658	8547	8765	5387	7235	9879
	7345	2386	4358	6478	9878	8768
	2467	5643	7699	8739	2586	7356
	3888	8769	3876	5594	3999	4275
	5437	9508	5947	8276	4261	8948
	6214	5499	2853	3385	8729	6729

- B. (1) Add together, three thousand seven hundred and sixty-five, four thousand eight hundred and seventy-eight, six thousand seven hundred and fifty-nine, three thousand eight hundred and ninety-four, seven thousand six hundred and seventy, and four thousand two hundred and eighty-one.
- (2) $8654 + 76 + 9832 + 5389 + 89 + 6738 + 5928$.
- (3) $9867 + 4298 + 3333 + 8778 + 6544 + 2222 + 7777$.
- (4) Put down two thousand five hundred and eighty-three six times, and then add up.
- (5) $2 + 3008 + 56 + 2753 + 109 + 5 + 6784 + 88$.
- (6) What is the sum of, seven thousand and forty, twenty-nine, one hundred and six, eight thousand and ten, and fifty-four?

C.	(1)	(2)	(3)	(4)	(5)
	70261	52768	4	82769	92875
	428	7079	65	3478	4369
	3209	53	987	85936	23
	520	88888	6419	22	7208
	87058	6	53274	507	85897
	75	507	68	95083	6666

D. (1)	(2)	(3)	(4)	(5)
42376	84567	56238	72894	28714
53854	78923	72873	42938	67389
89682	86254	54996	45367	74993
27543	21536	68387	93729	45678
74286	32748	85429	82456	37489

E. (1)	(2)	(3)	(4)	(5)
82764	78586	54638	85072	82763
53489	28375	92539	83980	25439
23645	89259	87465	52776	38764
72352	52894	38748	39298	58738
61478	88748	99824	77787	69499

F. (1) $28764 + 326 + 7801 + 7 + 689 + 23$.

(2) $46 + 93285 + 7 + 2614 + 5 + 66666$.

(3) $33333 + 4 + 55 + 777 + 8 + 949$.

(4) $210 + 72836 + 2877 + 1 + 76 + 308$.

(5) $72 + 888 + 9 + 28765 + 9979 + 6$.

G. (1) $86 + 30078 + 4 + 986 + 789 + 7$.

(2) $5 + 87789 + 68 + 50 + 478 + 3331$.

(3) $90 + 7 + 32964 + 10 + 7009 + 86$.

(4) $53014 + 2 + 1700 + 36 + 5555$.

(5) $1 + 22 + 333 + 444 + 7079 + 8$.

H. (1)	(2)	(3)	(4)	(5)
28769	45623	72876	82898	72778
53874	98706	53089	29369	89649
67348	50387	46905	98227	76786
32756	67778	37094	59985	92395
27938	83095	68808	42769	67958

I. (1)	(2)	(3)	(4)	(5)
92805	178	4682	75870	4
5783	80709	296	62998	3097
26	56	70805	36	28
8052	8091	8	8065	98769
789	14390	693	9	153
12845	978	98765	87796	7259

- J. (1) Find the amount of, twenty-six thousand three hundred and twenty-four, two hundred and nine, seven thousand and sixty-eight, forty-seven, and ten thousand eight hundred.
- (2) What is the sum of, ninety-four, eight thousand and sixty, three hundred and three, sixty thousand and six, and seven thousand two hundred and eighty-five?
- (3) $536 + 28769 + 3 + 47587 + 55555 + 898$.
- (4) Add together, eight hundred and thirty, twenty-nine, seven thousand five hundred and forty-five, sixty-six, twelve thousand and twelve, and three hundred.
- (5) Put down neatly and add up, $81578 + 26345 + 39496 + 2738 + 59377 + 72865$.

K. (1)	(2)	(3)	(4)	(5)
25434	37214	42683	72834	64683
32687	42638	27539	38467	55876
47925	53456	32874	43258	38059
23400	72372	68458	67734	46434
50376	38743	73685	24583	23928
82563	21854	50506	85709	67895

- L. (1) Find the sum of, 36, 28614, 39276, 9848, 12, and 77889.
- (2) Add together, 87654, 7, 3698, 65, 99218, and a thousand.
- (3) What is the amount of, 18, 70009, 2986, 38877, 99, and 39868?
- (4) Add up, 999, 8888, 77777, 6, 44444, and fifty thousand and eleven.
- (5) $96543 + 2878 + 896 + 47386 + 68295 + 98979$.

M. (1)	(2)	(3)	(4)	(5)
45367	78294	67897	86938	78959
28786	39987	98789	54867	89768
95645	94568	43208	98779	65437
36538	67326	75436	37584	96899
87894	54233	82975	76995	59936
43263	28549	54384	69736	88838

N. (1)	(2)	(3)	(4)	(5)
36987	78985	49	5408	78574
53	43298	3058	726	3986
7408	89	7	98355	52399
865	7074	98765	49	50
44	536	439	7690	7938
6909	99878	66666	838	657

Ex. 4.

A. (1)	(2)	(3)	(4)	(5)
328764	576329	486592	982653	592867
539635	887654	897889	897787	889543
276987	258945	648938	658398	293869
482596	872596	765796	789689	878978
985843	899438	238545	529976	653257
883962	666669	659889	852845	861432
776688	772250	943763	777777	998869
<hr/>				
B. (1)	(2)	(3)	(4)	(5)
547698	987642	528653	789643	832546
278543	868759	392876	254378	769287
896987	425876	987548	698999	376938
937876	984387	456389	887766	542875
423504	679408	709265	532878	287367
664467	532994	643877	458397	598998
555888	890575	888999	969786	987899
<hr/>				
C. (1)	(2)	(3)	(4)	(5)
876598	883333	787945	937684	567898
387629	444444	298768	528799	989768
543987	555555	539679	473858	474589
429896	888888	453858	658934	387675
987543	999999	928799	897698	473867
678978	768789	837657	589389	538796
742688	659876	778894	774593	759858
<hr/>				
D. (1)	(2)	(3)	(4)	
4789538	87312964	52786549	8769278467	
38765	98479	23894768	7897689598	
9876437	786	87659876	9786543749	
948	58976858	93276589	3978768878	
983796	7898767	84967897	5439896787	
98345	687939	76879786	6754387978	
7654708	95476878	68798345	9998798899	
89	983765	95437278	7777777777	
6572	68877999	88888888	8989898988	
5429867	8458	97896799	9999999999	
<hr/>				

Ex. 5.

- A. (1) James had two hundred and eight marbles, William one hundred and two, how many had they altogether?
- (2) What is the amount of, $2014 + 9 + 701 + 28 + 6800$?
- (3) Find the sum of eight thousand and seventy, four hundred and five, twenty-eight, two thousand and eleven, and ten.
- (4) How many nuts have I, if I have as many as my four brothers, each of whom has forty?
- B. (1) $6897 + 409 + 3085 + 5942 + 8888 +$ five hundred and eleven.
- (2) If a boy can lift eighty-seven pounds, how many pounds can six boys lift together? Write the answer in words.
- (3) In a garden there were three pear trees and an apple tree. The first pear tree gave 587 pears, the second 283, and the third 600. If the apple tree gave as many as the other three together, how many apples were there?
- (4) Nineteen + two thousand and twenty + eight hundred + seven + nine thousand and eight + sixty-six.
- C. (1) Add together, 3028 pencils, 2508 books, 687 slates, twenty-four maps, and three hundred copy books.
- (2) In England there are 40 counties, in Wales 12, in Scotland 33, and in Ireland 32. How many are there altogether?
- (3) Find the sum of, thirty-five thousand nine hundred and seven, seven thousand and six, forty-three, ten thousand and ten, nine, and four hundred and eighty. Write the answer in words.
- (4) If I go thirty-seven miles by rail, fourteen by coach, one hundred and nine by steamer, and then walk seven miles, what is the length of my journey?
- D. (1) What is the amount of, five thousand nine hundred and seventy-six, eighty thousand three hundred and six, two thousand and fifty-nine, eighty-six thousand seven hundred and fifty-four, and three hundred thousand five hundred and seventy-two?
- (2) My copy-book has twenty-four pages, and my reading-book has twelve more pages than my copy-book. How many pages are there in both the books?
- (3) $25087 + 908 + 76 + 58007 + 3956 + 27 + 78679$.
- (4) Write out in words how many animals belong to a farmer if he has 2007 sheep, 50 horses, 79 pigs, 310 cows, four dogs, and three donkeys.

- E. (1) Add together the following numbers: five thousand six hundred and seventy-two, one million two hundred and thirty-six thousand and five, one thousand and sixty-four, and three hundred and seven.
- (2) My sister is ten years old, and my brother is five years older than my sister; if my age is equal to both put together, how old am I?
- (3) Put down the following number seven times and then add:—9896705.
- (4) If there are twelve pennies in a shilling, how many pence in eleven shillings?
- F. (1) Find the sum of, 89,567, 3,294,086, 9,835, 778,966, 590 17,286,499, and ten thousand and ten.
- (2) William has 125 marbles, Tom 15 more than William, and Harry 96 more than Tom; how many had they altogether?
- (3) Express in figures and add together: eighty thousand and fifty-nine, one million sixty-eight thousand and thirteen, nine hundred and nine thousand and ninety.
- (4) A boy who sold papers was paid a penny a dozen. How many would he have to sell to earn a shilling and sixpence?
- G. (1) $77,777,777 + 98,914,566 + 9,773,988 + 7,463,966 + 950,466 + 98,890,978$.
- (2) A gentleman, who had an apple tree, gave 120 apples to one of his friends, 90 to another, 218 to another, and fifty-seven to another; he kept for his own use just as many as he had given away,—how many apples were there on the tree?
- (3) Write down in figures and find the sum of the following numbers:—fifteen thousand eight hundred and seventy-nine, one hundred thousand one hundred and one, nine hundred thousand and seven, ninety-two millions and seventeen, one hundred and eleven thousand one hundred and ten.
- (4) A has £29, B £65, C £304, D as much as A, B, and C together, and E £50 more than the sum of the other four; how much money have they in all?
- H. (1) One million and four+seven hundred and thirty millions three hundred and three thousand and eighty-five+forty thousand and forty-four+five hundred and five millions and fifty-five+nine thousand and ninety-eight.
- (2) If a boy is born this year (1877) when will he be 21 years old?
- (3) What do all the numbers from one to twenty amount to?
- (4) In a school there were 209 infants, eighty-one more girls than infants, and two hundred and eleven more boys than girls; find the total number of children in the school.

Ex. 6.

A.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	3	4	6	5	8	8	7	9	6	8	9	9
	2	1	3	4	2	4	5	6	4	6	7	8
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

B.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	12	38	56	49	80	27	18	92	76	85
	10	15	25	19	70	4	13	90	62	55
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

C.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	207	569	470	193	637	980	509	811
	104	237	120	60	204	380	408	1
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

D.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	768	905	150	688	729	580	400	989
	315	400	40	287	613	530	300	376
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

E.	F.	G.	H.	I.
(1) 15-12	(1) 206- 4	(1) 779-407	(1) 859-408	(1) 258-208
(2) 50-30	(2) 183- 50	(2) 328-106	(2) 707-704	(2) 479-236
(3) 87-47	(3) 720-800	(3) 206-200	(3) 999-599	(3) 858-715
(4) 28-20	(4) 408-405	(4) 594-204	(4) 140- 20	(4) 397- 84
(5) 47- 6	(5) 879-258	(5) 989-837	(5) 308- 7	(5) 209-207
(6) 29-18	(6) 986-706	(6) 412-202	(6) 903-700	(6) 966-560

J.	(1)	(2)	(3)	(4)	(5)	(6)
	9507	1048	7958	8339	9605	2037
	2305	46	7057	5039	4002	70
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

K.	(1)	(2)	(3)	(4)	(5)	(6)
	8968	7504	9901	5080	1597	4895
	7847	7203	6700	80	365	2875
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

Ex. 7.

A. (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2670	1002	6538	9879	2332	9002	5266	7721
1248	40	2604	8943	1326	1905	2958	3915
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

B. (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
7800	3456	5290	2607	2108	3672	5286	5305
6790	2850	3899	1908	99	978	3989	5295
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

C.	D.	E.	F.
(1) 2507 - 1928	(1) 1206 - 406	(1) 5877 - 2968	(1) 9328 - 6750
(2) 3650 - 1551	(2) 3875 - 1290	(2) 3250 - 2846	(2) 3807 - 2957
(3) 1001 - 12	(3) 6080 - 2800	(3) 1508 - 1299	(3) 1202 - 808
(4) 3989 - 8889	(4) 4596 - 2839	(4) 6385 - 4778	(4) 6708 - 2593
(5) 6536 - 2928	(5) 3267 - 1758	(5) 3870 - 1920	(5) 2634 - 1595
(6) 5266 - 1806	(6) 6543 - 2987	(6) 9386 - 4797	(6) 3867 - 1959
(7) 8705 - 6928	(7) 5878 - 1894	(7) 6606 - 6590	(7) 5426 - 2864
(8) 7766 - 2958	(8) 2356 - 1008	(8) 3333 - 1234	(8) 3704 - 1705

G. (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2308	5987	7800	8650	7283	5927	3001	6975
609	4492	990	1949	6977	4997	2010	3298
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

H. (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
8880	3074	5515	2070	6123	8726	8490	6528
5928	969	4599	1090	3213	3875	1899	5539
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

- L (1) From two thousand and ten, take nine hundred and one.
 (2) Subtract ninety, from one thousand one hundred.
 (3) How much greater is nine thousand and seven, than 709 ?
 (4) Take one thousand nine hundred and thirty-one from 3030.
 (5) Subtract 7896 from nine thousand.
 (6) What is the difference between 4704 and 2908 ?
 (7) From eight thousand and eight, take seven thousand and nine.
 (8) Subtract one thousand nine hundred and eighty-seven, from two thousand four hundred and seventy-five.

Ex. 8.

- A. (1) From one thousand, take nine.
(2) Take two thousand and seventy-nine, from eight thousand four hundred and six.
(3) Take from five thousand one hundred and eighty-four, eight hundred and fifteen.
(4) From six thousand four hundred and thirty-seven, take five thousand nine hundred and sixty-eight.
- B. (1) Subtract five hundred and ninety-nine, from three thousand six hundred and four.
(2) From nine thousand two hundred and forty-five, take three thousand and sixty-eight.
(3) Take two thousand eight hundred and six, from seven thousand four hundred and twenty.
(4) Find the difference between six thousand and thirty, and four thousand nine hundred and eighty-six.
- C. (1) Take six thousand five hundred and ninety-six, from seven thousand and six.
(2) How much more than three hundred and six, is five thousand and ten ?
(3) Subtract four thousand three hundred and nine, from five thousand and sixteen.
(4) From four thousand two hundred and five, take one thousand three hundred and seventy-six.
- D. (1) Subtract two thousand and eighty-five, from six thousand seven hundred and one.
(2) Take nine hundred and sixty-seven, from one thousand and seventy.
(3) From five thousand six hundred and fourteen, take two thousand seven hundred and thirty-nine.
(4) From five thousand and six, take one thousand nine hundred and eight.
- E. (1) Take seven thousand one hundred and sixty-four, from eight thousand four hundred and twenty-six.
(2) Subtract two thousand nine hundred and twenty-six, from eight thousand two hundred and ninety-four.
(3) Two thousand and thirty-seven — one thousand and sixty-four.
(4) From seven thousand five hundred and eighty-seven, take six thousand nine hundred and seventy-eight.
- F. (1) Two thousand and fourteen — nine hundred and thirty-six.
(2) Take three hundred and eighty-six, from seven thousand three hundred and fifty-two.
(3) From five thousand two hundred and seventy-three, take one thousand nine hundred and eighty-six.
(4) Subtract two thousand four hundred and nine, from nine thousand one hundred and seventy-five.

Ex. 9.

A.	(1)	(2)	(3)	(4)	(5)	(6)
	13064	38004	20769	17285	83297	30279
	<u>329</u>	<u>19908</u>	<u>9294</u>	<u>16849</u>	<u>49889</u>	<u>19936</u>

- B. (1) From seventeen thousand and six, take nine thousand one hundred and eight.
 (2) Take thirty-nine thousand and seventy-six, from seventy-four thousand two hundred and three.
 (3) Subtract forty thousand one hundred and seventy-nine, from sixty-three thousand and eighteen.
 (4) What is the difference between thirty-five thousand and seventeen, and eight thousand and seventy-nine.
 (5) Subtract eighteen thousand nine hundred and seventy-six, from twenty-three thousand three hundred and four.
 (6) From thirty-eight thousand five hundred and forty, take nineteen thousand eight hundred and one.

C.	D.	E.
(1) 27680 - 9090	(1) 32807 - 17909	(1) 29475 - 18790
(2) 80765 - 79858	(2) 59268 - 48659	(2) 38650 - 19649
(3) 12304 - 1496	(3) 33203 - 22998	(3) 73208 - 69708
(4) 32745 - 11929	(4) 12345 - 3254	(4) 50010 - 11001
(5) 73211 - 66202	(5) 78070 - 7976	(5) 23405 - 12998
(6) 88909 - 78899	(6) 36552 - 29287	(6) 66666 - 57656

- F. (1) From seventeen thousand and eighteen, take 9,807.
 (2) Find the difference between 12,450 and 30,509.
 (3) Take 4,988, from thirty-five thousand and eighty-seven.
 (4) Subtract 28,465 from 53,106.
 (5) 57,890 - 18,706.
 (6) Take nine thousand and eighty-six, from eighty thousand and sixty-four.

G.	(1)	(2)	(3)	(4)	(5)	(6)
	49886	73894	52768	98654	20145	22378
	<u>38697</u>	<u>8497</u>	<u>38979</u>	<u>78645</u>	<u>12074</u>	<u>1689</u>

H.	(1)	(2)	(3)	(4)	(5)	(6)
	78605	39081	65873	59287	37297	81827
	<u>69709</u>	<u>28057</u>	<u>47968</u>	<u>28909</u>	<u>19999</u>	<u>39895</u>

Ex. 10.

A.	(1)	(2)	(3)	(4)	(5)	(6)
	120546	192900	765428	200107	960218	138614
	60582	48299	294919	190207	800909	97907

B.	C.	D.
(1) 305,706 - 192,899	(1) 120,746 - 90,684	(1) 1,002,657 - 8,968
(2) 100,201 - 6,192	(2) 275,038 - 74,939	(2) 3,720,458 - 860,549
(3) 530,876 - 460,970	(3) 789,285 - 698,796	(3) 2,932,865 - 1,929,868
(4) 928,345 - 469,837	(4) 530,078 - 299,993	(4) 5,327,614 - 827,099
(5) 219,053 - 8,958	(5) 769,803 - 168,903	(5) 1,523,680 - 9,981
(6) 407,266 - 396,866	(6) 253,657 - 82,968	(6) 7,269,543 - 2,699,878

- E. (1) From 1,065,328 take sixty-four thousand nine hundred and nine.
 (2) Subtract 865,389 from 2,006,099.
 (3) 72,801,489 - 48,960,880.
 (4) Find the difference between ten million and ten, and 870,568.
 (5) Take ninety thousand seven hundred and ninety, from one million two hundred and sixty thousand two hundred and five.
 (6) How much is a million and two hundred greater than ten thousand one hundred and one?

F.	(1)	(2)	(3)	(4)
	84,331,306	256,714,894	532,867,004	328,001,070
	56,421,808	93,553,760	128,692,909	68,090,990

- (5) From 4,723,698,007 take 493,298,127.
 (6) What is the difference between 683,216,432 and 89,532,179?
 G. (1) Subtract one hundred and seven thousand and ten, from twenty million ten thousand one hundred and one.
 (2) Write down two million five hundred and two, and subtract from it nine hundred and nine thousand seven hundred and ten.
 (3) Find the difference between two million and nine thousand one hundred, and seven hundred million fifty thousand and twenty.

(4)	(5)	(6)
4,723,698,007	97,040,341,061	1,210,678,301
494,789,127	933,701,697	109,989,202

Ex. 11.

- A. (1) If Tom has 100 nuts and Harry 55, how many more has Tom than Harry?
- (2) Take the difference between 58 and 75 from a thousand.
- (3) From nine thousand and seventeen, take seven thousand and nineteen.
- (4) A man who sold eggs had two hundred and ten in his basket. How many had he left after selling one hundred and nine?
- B. (1) How many less is six hundred and six, than nine hundred and seventy?
- (2) If one thousand eight hundred and ninety-seven are taken from two thousand nine hundred and eighty-seven, how many are left? Write the answer in words.
- (3) One thousand two hundred and five—one hundred and ninety-eight.
- (4) In a boy's sum book there were one thousand and eighty sums. After working seventy-nine, what number had he to do?
- C. (1) If there are 365 days in a year and seven days in a week, how many more days are there in a year than in a week?
- (2) What is the difference between five thousand six hundred and twenty-seven, and two thousand eight hundred and seventy-nine?
- (3) How many must be added to six thousand and forty-five, to make seven thousand and fifty? Write out the answer in words.
- (4) Subtract ten thousand nine hundred and ninety-five, from twenty-one thousand and two.
- D. (1) A Farmer who had one thousand and fifteen sheep, sold four hundred and ninety-six; how many had he left?
- (2) Subtract from twenty-one thousand and thirteen, one thousand one hundred and twenty-nine, and write the difference in words.
- (3) If Mary was born in the year 1860, and Jane in 1871, how much younger is Jane than Mary?
- (4) A piece of dictation is given out with one hundred and three words in it. If twenty-seven words are right, how many are wrong?

PROBLEMS IN SIMPLE ADDITION AND SUBTRACTION.

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Ex. 12.

- A. (1) Take the difference between 201 and 91 from their sum.
(2) Two boys who joined at marbles had between them a thousand. They *each* won fifty, and then sold 500, how many had they left?
(3) $(5876 + 2969) - (3075 + 2128)$.
(4) If my father is sixty years old, and my mother four years younger than my father, what is the sum of their ages?
- B. (1) In a street there were two hundred and twelve houses. Nine were burnt down in a fire. After twenty new ones were built, how many houses were there in the street?
(2) Take 2000 from the sum of seven thousand and six, and one thousand nine hundred and ninety-four, and write the answer in words.
(3) If on one page there were 350 words and on another 370 words, how many must there be on the third page so as to make a thousand altogether?
(4) A man owes £500 and pays £205 and then £195, what does he still owe?
- C. (1) How many more legs have eight sheep than nine hens?
(2) In a mixed school of six hundred scholars, 258 were boys, and 209 girls. If the rest were infants, how many were there?
(3) Add the sum of 89 and 195 to the difference between 77 and 100, and write the result in words.
(4) In a railway train there were two hundred and sixteen people. If fifty-six got out at one station, and thirty-nine entered at another, how many people would there still be in the train?
- D. (1) How much greater is the sum of the following two numbers than their difference, 1001 and 2990? Write the answer in words.
(2) If a boy is sixteen years old and his sister is five years older, how many years must be added to both their ages to make them together equal to their father's, which is fifty?
(3) A tailor has a piece of cloth which measures seventy-one yards. If he cuts off nine suits, each five yards, how much has he left?
(4) In a school there were 156 infants, 264 girls, and as many boys as infants and girls put together. How many more scholars would be wanted to make the total number just 1000?

PROBLEMS IN SIMPLE ADDITION AND SUBTRACTION.

- E. (1) A boy who had 1,760 marbles, lost 45 and 372. He afterwards won 516 and 27. What number had he then ?
 (2) In a school there are eighty-five children, twenty-seven of whom are boys. How many more girls are there than boys ?
 (3) Subtract nine hundred and fifty-eight thousand seven hundred and ninety-one, from the sum of 1,015,080 + 409,790 + 242,699.
 (4) If the less of two numbers is 126 and the difference between the two numbers is 24, what is the greater number ?
- F. (1) Add together 230,405,607, 340,506, 40,005,707, and 4,030,200,000; and subtract 3,900,201,499 from the sum. Write down the result in words.
 (2) If Tom gets 15 more sums right than Harry, and Harry has five more than Sam, how many less than a thousand do they get right altogether if Sam does 50 ?
 (3) From the sum of the following two numbers take their difference: 1001 and 692.
 (4) A woman who had a basketful of oranges sold 20 to one gentleman, 53 to another, and 100 to another. She had then twenty-seven left, how many had she at first ?
- G. (1) A pupil at his examination gained the following marks: 95, 80, 66, 71, 74, 87, 92, 93, 125, 47, 65, 43, 115, 75, 76, 80. How many marks did he get altogether, and how many more must he have gained to have the full number of 1500 marks ?
 (2) From the sum of four millions two hundred and forty-one thousand seven hundred and nine, and one million thirty-three thousand and eighty-two, subtract three millions seven hundred, and write the answer in words.
 (3) If I am twenty years old and my brother is eleven years older, how old is my grandfather who is nineteen years older than both our ages put together ?
 (4) The Moon is 240,000 miles from the earth, and the Sun is ninety-five million of miles: how much is the Sun farther from the earth than the Moon ?
- H. (1) By how much does the sum of 20 and 30 exceed their difference ?
 (2) What number must be added to sixty-nine thousand four hundred and twenty-seven, to make three hundred and twenty-five millions seven thousand and twenty-one ?
 (3) How much is the difference between 628,716 and 79,019 greater than the sum of 56,095, 2,800, 10,009, 7,097, 163, 3,000, and 90,829 ?
 (4) In going round once, does the clock strike more or less than a hundred times ?

EX. 13.

A.	(1)	(2)	(3)	(4)	(5)	(6)	B.	(1)	(2)	(3)	(4)	(5)	(6)
	21	23	32	40	33	43		45	53	26	55	63	56
	2	2	2	2	2	2		2	2	2	2	2	2
	—	—	—	—	—	—		—	—	—	—	—	—

C.	D.	E.	F.	G.	H.
(1) 23×3	(1) 64×3	(1) 43×4	(1) 34×5	(1) 52×6	(1) 85×7
(2) 30×3	(2) 56×3	(2) 54×4	(2) 42×5	(2) 35×6	(2) 68×7
(3) 43×3	(3) 75×3	(3) 72×4	(3) 67×5	(3) 84×6	(3) 74×7
(4) 25×3	(4) 78×3	(4) 68×4	(4) 83×5	(4) 69×6	(4) 39×7
(5) 54×3	(5) 83×3	(5) 59×4	(5) 95×5	(5) 77×6	(5) 87×7
(6) 36×3	(6) 97×3	(6) 37×4	(6) 89×5	(6) 93×6	(6) 95×7

I. Multiply *each* of the following numbers by 2, 3, 4, 5, 6, 7.

(a) 23056	(g) 58270	(m) 29337	(s) 57867
(b) 30587	(h) 35946	(n) 58809	(t) 89738
(c) 75900	(i) 42809	(o) 76587	(u) 43987
(d) 87460	(j) 32675	(p) 93275	(v) 67879
(e) 23854	(k) 25438	(q) 47386	(w) 53286
(f) 62509	(l) 62577	(r) 29579	(x) 98897

J.	(1)	(2)	(3)	(4)	(5)	(6)
	34268	59309	76538	87865	39287	38765
	8	9	10	11	12	9
	—	—	—	—	—	—

K.	(1)	(2)	(3)	(4)	(5)	(6)
	73549	87396	58967	88770	76329	98769
	10	12	9	8	11	8
	—	—	—	—	—	—

L. Multiply *each* of the following numbers by 7, 8, 9, 10, 11, and 12. In each case write out the answer in words.

- (a) Seven thousand two hundred and nine.
- (b) Five thousand eight hundred and seventeen.
- (c) Nine thousand and seven.
- (d) Six thousand seven hundred and eighty-five.
- (e) Eight thousand nine hundred and forty.
- (f) Two thousand five hundred and nineteen.

Ex. 14.

A.	B.	C.	D.
(1) 2406×14	(1) 5427×24	(1) 4725×33	(1) 8675×45
(2) 3754×15	(2) 4680×25	(2) 5380×35	(2) 3980×49
(3) 2530×16	(3) 3765×27	(3) 7659×36	(3) 2769×50
(4) 7265×18	(4) 7097×28	(4) 8396×40	(4) 3872×54
(5) 4619×20	(5) 6324×30	(5) 7405×42	(5) 6689×55
(6) 5386×21	(6) 6723×32	(6) 5927×44	(6) 9270×56

- E. (1) Multiply nine thousand and ninety, by sixty.
 (2) Multiply six thousand four hundred and seven, by sixty-four.
 (3) Multiply seven thousand and sixteen, by sixty-six.
 (4) Multiply five thousand seven hundred and forty-five, by seventy.
 (5) Multiply two thousand eight hundred and thirty-seven, by seventy-two.
 (6) Multiply four thousand and sixty-eight, by eighty.

F. (1)	(2)	(3)	(4)	(5)	(6)
26054	73256	65380	70387	53268	76285
43	57	38	76	47	86
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

G. (1)	(2)	(3)	(4)	(5)	(6)
47326	49308	83296	67285	36295	29387
67	78	82	59	90	87
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

H. (1)	(2)	(3)	(4)	(5)	(6)
87538	56387	68370	59237	83794	94978
79	95	99	46	85	85
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

- I. (1) Multiply twenty-six thousand three hundred and forty-seven, by seventy-three.
 (2) Multiply thirty-nine thousand two hundred and eight, by fifty-eight.
 (3) Multiply sixty-seven thousand five hundred and ninety-four, by sixty-nine.
 (4) Multiply eighty-three thousand and twenty-five, by forty-seven.
 (5) Multiply ninety thousand two hundred and eighty-three, by thirty-eight.
 (6) Multiply fifty-eight thousand three hundred and sixty-four, by ninety-five.

- J.** (1) Multiply sixty-eight thousand seven hundred and forty-five, by fifty-seven.
 (2) Multiply five thousand and ninety, by forty-eight.
 (3) Multiply sixty-five thousand and eighty-seven, by seventy-three.
 (4) Multiply forty-five thousand seven hundred and sixty-nine, by eighty-four.
 (5) Multiply forty thousand five hundred and sixty-nine, by eighty-seven.
 (6) Multiply seventy-three thousand seven hundred and four, by seventy-five.
- K.** (1) Multiply forty-five thousand one hundred and thirty-nine, by fifty-seven.
 (2) Multiply six thousand one hundred and seventy-four, by eighty-four.
 (3) Multiply eighty-seven thousand and six, by sixty.
 (4) Multiply thirty-five thousand seven hundred, by twenty-nine.
 (5) Multiply six thousand five hundred and eighty-seven, by fifty-eight.
 (6) Multiply seventeen thousand two hundred and ninety-three, by thirty-nine.
- L.** (1) Multiply fifty-eight thousand two hundred and seven, by fifty-six.
 (2) Multiply eighty-four thousand nine hundred and seventy-six, by seventy.
 (3) Multiply seventy-six thousand five hundred and eighty-nine, by sixty-eight.
 (4) Multiply ninety-seven thousand and nine, by eighty-nine.
 (5) Multiply eighty-five thousand five hundred and forty-seven, by eighty-eight.
 (6) Multiply seventy-nine thousand and ninety-eight, by ninety.
- M.** (1) Multiply fifty-eight thousand seven hundred and sixty-nine, by ninety-seven.
 (2) Multiply seventy thousand three hundred and eighty-eight, by sixty-eight.
 (3) Multiply eighty-nine thousand seven hundred and sixty-five, by seventy-nine.
 (4) How much is ninety-three times eighty thousand seven hundred and seven?
 (5) Find the product of seventy-three thousand and eleven, and ninety-nine.
 (6) Multiply ninety-eight thousand eight hundred and ninety-seven, by ninety-eight.

Ex. 15.

A.	B.	C.	D.
(1) 2837×123	(1) 3745×345	(1) 5678×650	(1) 8726×875
(2) 3500×130	(2) 2580×460	(2) 3205×700	(2) 3257×480
(3) 4670×204	(3) 5376×506	(3) 4368×836	(3) 3985×707
(4) 5285×325	(4) 3829×720	(4) 2757×678	(4) 6759×570
(5) 6304×230	(5) 6374×374	(5) 5826×507	(5) 2976×638
(6) 6583×400	(6) 8256×638	(6) 7638×486	(6) 7289×887

- E. (1) Multiply eight thousand three hundred and fifty-six, by two hundred and fifty.
 (2) Multiply seven thousand two hundred and eighty-five, by three hundred and forty-seven.
 (3) Multiply three thousand and forty-seven, by six hundred.
 (4) Multiply five thousand three hundred and eighty-nine, by five hundred and thirty-six.
 (5) Multiply six thousand five hundred and forty-six, by seven hundred and twenty-eight.
 (6) Multiply four thousand three hundred and eighteen, by eight hundred and ten.

F. (1)	(2)	(3)	(4)	(5)	(6)
25438	18747	35986	17289	46937	67988
986	768	590	908	879	780
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

G. (1)	(2)	(3)	(4)	(5)	(6)
47928	38796	79587	68950	16789	39879
597	898	990	800	679	998
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

H. (1)	(2)	(3)	(4)	(5)	(6)
38769	55379	19698	93628	87298	27900
478	580	896	900	789	890
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

- I. (1) Multiply fifty thousand and seventy, by 387.
 (2) Multiply eighty-eight thousand and nineteen, by 930.
 (3) What is the product of 37,200 and 564.
 (4) How much is 891 times 23,456?
 (5) Multiply twelve thousand and seventy-seven, by 708.
 (6) Multiply thirty-seven thousand eight hundred and fifty-nine, by seven hundred and ninety-five.

- J.** (1) Multiply thirty-five thousand six hundred and seventy-eight, by three hundred and twenty-nine.
- (2) Multiply ninety-five thousand six hundred and seventy-one, by two hundred and seventy-eight.
- (3) Multiply seventy-six thousand and forty-five, by eight hundred and six.
- (4) Four thousand nine hundred and six \times seven hundred and eighty.
- K.** (1) Multiply twenty-seven thousand six hundred and four, by four hundred and eighty-five.
- (2) Multiply sixty thousand four hundred and fifty-three, by three hundred and eighty.
- (3) Multiply fifty-four thousand nine hundred and eight, by six hundred and ninety.
- (4) How much is seven hundred and fourteen times eight thousand three hundred and five?
- L.** (1) Multiply eighty-six thousand seven hundred and fifty-four, by three hundred and fifty.
- (2) What is the product of six thousand nine hundred and seventy, and five hundred and seventy-nine?
- (3) Multiply fifty-six thousand nine hundred and seventy-five, by six hundred and eight.
- (4) Multiply ninety-three thousand seven hundred and six, by four hundred and eighty.
- M.** (1) Multiply sixty-five thousand and eighty-seven, by 784.
- (2) If seven thousand five hundred and nine is multiplied by 136, what is the product?
- (3) Multiply thirty-six thousand seven hundred and ninety-eight, by six hundred and five.
- (4) Multiply 16,578 by five hundred and twenty-nine.
- N.** (1) Multiply 312,187 by 649.
- (2) Find the product of 8,604 and six hundred and nine.
- (3) Multiply eighty thousand nine hundred and seventy-three, by three hundred and eighty-four.
- (4) How much is eight hundred and sixty times eighty-seven thousand and ninety-six?

Ex. 16.

A.	B.	C.
(1) 16253×3205	(1) 42507×3702	(1) 73296×6000
(2) 73065×4007	(2) 53689×4567	(2) 88547×5080
(3) 68276×1234	(3) 38746×5008	(3) 92006×5709
(4) 52435×5000	(4) 70236×6381	(4) 36740×8500
(5) 63843×7350	(5) 43572×4750	(5) 42305×4268
(6) 27341×2600	(6) 68437×3486	(6) 53798×7896

- D. (1) Multiply eighty-seven thousand nine hundred and forty-six, by six thousand seven hundred.
- (2) Multiply twenty-eight thousand and fifty-nine, by two thousand three hundred and forty-five.
- (3) Multiply fifty thousand seven hundred and twenty, by five thousand and eighty.
- (4) Multiply sixty-seven thousand eight hundred and ninety-five, by four thousand five hundred and sixty-seven.
- (5) Multiply thirty-eight thousand two hundred and five, by seven thousand two hundred and eleven.
- (6) Multiply forty-nine thousand, by eight thousand.

E.	F.	G.
(1) 37296×6538	(1) 72498×3897	(1) 67298×5796
(2) 43857×7805	(2) 46347×8256	(2) 53865×8078
(3) 64385×9070	(3) 50809×7638	(3) 89764×5320
(4) 58279×3729	(4) 29768×4985	(4) 42698×7987
(5) 43850×6900	(5) 36205×5809	(5) 20789×6070
(6) 38297×5387	(6) 72836×5097	(6) 97258×8905

- H. (1) Find the product of 82,759 and 4,700.
- (2) Multiply 29,987 by 9,870.
- (3) How much is four thousand and ten times 37,298 ?
- (4) Multiply 82,075 by 7,658.
- (5) Multiply 32,987 by 5,909.
- (6) Multiply seventy-six thousand and nineteen, by 5,678.

- I.** (1) Multiply twenty-eight thousand and seventy, by five thousand and thirty.
(2) Multiply thirty thousand six hundred, by seven thousand and eight.
(3) Multiply forty-nine thousand by nine thousand two hundred.
(4) Multiply fifty-six thousand and seven, by eight thousand and ten.
- J.** (1) Multiply eleven thousand and nineteen, by four thousand seven hundred and fifty-three.
(2) Multiply seventeen thousand and eight, by one thousand three hundred and six.
(3) How much is seven thousand times twelve thousand and five?
(4) Multiply seventy-six thousand three hundred and eighty-nine, by nine thousand and eighty.
- K.** (1) Multiply eighty thousand five hundred, by five thousand and six.
(2) If four thousand and fifty-seven is multiplied by itself, what is the product?
(3) Multiply fourteen thousand four hundred and nine, by eight thousand seven hundred and fifty.
(4) Multiply sixty thousand and seventy, by three thousand four hundred and sixty-nine.
- L.** (1) Multiply ninety-eight thousand seven hundred and sixty-five, by five thousand six hundred and seventy-eight.
(2) What is the product of seven thousand and thirty, and three thousand and seventy?
(3) Multiply twenty thousand and eleven, by nine thousand and ten.
(4) Multiply forty-three thousand five hundred, by six thousand.
- M.** (1) Multiply eleven thousand eight hundred and nine, by seven thousand five hundred and sixty.
(2) Multiply nine thousand and seventy, by itself.
(3) Multiply seventy-two thousand and fifty, by eight thousand and seven.
(4) Multiply fifty-nine thousand three hundred and eighty-seven, by seven thousand eight hundred and ninety-six.

EX. 17.

A.

- (1) 254386×50738
- (2) 680739×68005
- (3) 509217×75690
- (4) 726542×23048
- (5) 290687×48906
- (6) 123456×40570

B.

- (1) 368527×48070
- (2) 905268×35200
- (3) 289500×67490
- (4) 167285×19356
- (5) 572808×72480
- (6) 653479×83529

- C. (1) Multiply seventeen thousand nine hundred and forty-three, by five thousand and seventy-nine.
- (2) Multiply 812,500,625 by 4,096.
- (3) Multiply 8,060,574 by one thousand four hundred and seven.
- (4) Multiply 2,943,017 by 17,068.
- (5) Find the product of 9,040,856 and 50,607.
- (6) Multiply one hundred and forty-seven thousand two hundred and ninety-seven, by six thousand seven hundred and eighty-nine.
- D. (1) Multiply two million nine hundred and forty-three thousand and seventeen, by one thousand one hundred and eleven.
- (2) Multiply one million nine thousand and eighty-seven, by six hundred thousand five hundred and forty-three.
- (3) $602,000,208 \times 900,007$.
- (4) Multiply five hundred and seventy thousand four hundred and ninety-two, by seven thousand nine hundred and eighty-five.
- (5) Multiply 103,003,005, by thirty thousand six hundred and seven.
- (6) Multiply six hundred and eighty-seven thousand five hundred and ninety-nine, by twenty-nine thousand seven hundred and eight.

E.

- (1) $653,228,756 \times 487,050$
- (2) $389,504,298 \times 576,230$
- (3) $472,075,387 \times 234,005$
- (4) $725,468,209 \times 925,478$
- (5) $293,254,898 \times 297,046$
- (6) $384,728,553 \times 623,989$

F.

- (1) $5,929,397,298 \times 7,820,409$
- (2) $4,608,238,657 \times 5,296,320$
- (3) $2,787,594,385 \times 4,567,815$
- (4) $7,558,769,790 \times 8,990,786$
- (5) $4,987,298,683 \times 5,859,497$
- (6) $9,879,678,597 \times 9,987,684$

Ex. 18.

- A. (1) Multiply two hundred and twenty-seven thousand three hundred and fifty-one, by four hundred and twenty-nine.
(2) How much does three thousand five hundred times seventeen thousand and twelve amount to?
(3) Multiply ten thousand one hundred and one by itself, and give the result in words.
(4) Find the continued product of $87 \times 56 \times 409$.
- B. (1) Multiply 58,212 by 481.
(2) If seven boys have each one hundred and twenty marbles, how many less than a thousand have they altogether?
(3) Multiply two million seven hundred and ten thousand four hundred and thirty-two, by three hundred and seventy-five.
(4) Find the product of 72,938 and 59,768 and write the answer in words.
- C. (1) Multiply thirty-nine thousand seven hundred and eighty, by four thousand seven hundred and ninety.
(2) What number divided by 97 gives 204?
(3) $8,754,398 \times 46,950$.
(4) How many bricks will be used in making a tunnel 3,697 yards long, if 2,758 bricks are used for each yard?
- D. (1) Multiply two million nine hundred and forty-three thousand and seventeen, by one thousand one hundred and eleven.
(2) Find the product of 8,979 and 9,798 and write it in words.
(3) Multiply 38,090 by itself.
(4) How many sheep have fifty-six farmers, if each has two hundred and fifteen?
- E. (1) If you can buy fifteen nails for a halfpenny, how many would you get for a shilling?
(2) $7,258,395 \times 76,389$.
(3) Multiply three hundred and ninety thousand and seventy-seven, by fourteen thousand eight hundred.
(4) If a boy writes a copy in half an hour, how long would he be in writing through a book with twelve leaves and four copies on each leaf?

- F. (1) Multiply 8,257,009 by 78,541.
(2) If a farmer had thirty-two horses shod twice a week, how many horse-shoes had he to pay for in a month?
(3) Multiply the sum of 869 and 1060 by the difference between 4009 and 209.
(4) If a railway carriage wheel turns 1689 times in going a league, how many turns will it have made after it has travelled 3574 leagues?
- G. (1) Multiply seven hundred and forty-five thousand six hundred and ninety-eight, by six thousand and seventy.
(2) 9275436×796380 .
(3) In a flock of one thousand and five sheep, how many feet are there?
(4) What is the continued product of 50, 470 and 5308?
- H. (1) If a ship sail one hundred and thirty-seven miles in a day how far does it go in a week?
(2) Multiply thirty-eight thousand and seventy, by nineteen thousand and fifty.
(3) Find the product of 12345 and 67890.
(4) The 365th part of a number is 101,001, what is the number?
- I. (1) Multiply three millions and three by one hundred and fifty thousand three hundred and five. Express the result in words.
(2) What is the continued product of 270, 5083, and 6759?
(3) 573986×89070 .
(4) How many miles will a person walk in 63 years, supposing he travels 6 miles each day, and there are 365 days in a year?
- J. (1) Add together:—two hundred and seven, fifty thousand nine hundred and fifty, one million and thirty thousand seven thousand and thirty-nine, nine hundred and seventy-five thousand three hundred and twenty-one, ten thousand and fifteen; take away from the sum ninety-eight thousand seven hundred and eighty-seven. Multiply the remainder by seventy-nine, and write out the answer in words.
(2) Multiply 93,287 by 7,503.
(3) Find the product of two numbers, the greater of which is 1070, and the difference 169.
(4) If there are 24 sheets in a quire of paper, and 20 quires in a ream, how many sheets are there in 480 reams?

Ex. 19.

A.	(1)	(2)	(3)	(4)	(5)	(6)
	2)2462	2)8064	2)6230	2)3048	2)5210	2)7234

B.	(1)	(2)	(3)	(4)	(5)	(6)
	2)3309	2)5274	2)4932	2)9016	2)7356	2)5930

C.	(1)	(2)	(3)	(4)	(5)	(6)
	2)4573	2)1009	2)3879	2)1370	2)9539	2)7000

D.	E.	F.	G.	H.
(1) 8492 ÷ 2	(1) 6039 ÷ 3	(1) 1087 ÷ 3	(1) 8920 ÷ 3	(1) 5129 ÷ 3
(2) 1103 ÷ 2	(2) 3060 ÷ 3	(2) 7908 ÷ 3	(2) 5009 ÷ 3	(2) 2695 ÷ 3
(3) 7984 ÷ 2	(3) 6909 ÷ 3	(3) 8019 ÷ 3	(3) 6900 ÷ 3	(3) 3713 ÷ 3
(4) 8001 ÷ 2	(4) 4305 ÷ 3	(4) 5205 ÷ 3	(4) 7358 ÷ 3	(4) 8895 ÷ 3
(5) 9715 ÷ 2	(5) 7842 ÷ 3	(5) 9284 ÷ 3	(5) 2707 ÷ 3	(5) 9238 ÷ 3
(6) 3857 ÷ 2	(6) 4068 ÷ 3	(6) 2091 ÷ 3	(6) 8059 ÷ 3	(6) 5681 ÷ 3

I.	(1)	(2)	(3)	(4)	(5)	(6)
	4)4812	4)8136	4)2032	4)5027	4)6232	4)3036

J.	(1)	(2)	(3)	(4)	(5)	(6)
	4)7073	4)6378	4)3870	4)1055	4)3899	4)7989

K.	(1)	(2)	(3)	(4)	(5)	(6)
	5)5208	5)6035	5)8217	5)9530	5)7386	5)2429

L.	(1)	(2)	(3)	(4)	(5)	(6)
	5)1786	5)9720	5)7438	5)8007	5)9983	5)5099

M. Divide *each* of the following numbers by 2, 3, 4, 5.

- (a) Two thousand and fifty.
- (b) Five thousand seven hundred and eighty-four.
- (c) Six thousand two hundred and nineteen.
- (d) Seven thousand nine hundred and forty-eight.
- (e) Four thousand three hundred and seven.
- (f) Three thousand eight hundred and ninety-five.
- (g) One thousand seven hundred and ten.
- (h) Eight thousand nine hundred and fifty-three.

- N. (1) Divide three thousand nine hundred and eight, by two.
 (2) Divide four thousand two hundred and fifty-seven, by three.
 (3) Divide eight thousand and eighty, by four.
 (4) Divide three thousand seven hundred and eighty-four, by five.
 (5) Divide five thousand three hundred and twenty-four, by three.
 (6) Divide eight thousand six hundred and ninety, by five.

O.	P.	Q.	R.
(1) $24738 \div 6$	(1) $97287 \div 6$	(1) $79248 \div 7$	(1) $80220 \div 7$
(2) $72840 \div 6$	(2) $65428 \div 6$	(2) $85050 \div 7$	(2) $35018 \div 7$
(3) $85044 \div 6$	(3) $73695 \div 6$	(3) $94087 \div 7$	(3) $40827 \div 7$
(4) $15408 \div 6$	(4) $28759 \div 6$	(4) $70019 \div 7$	(4) $52638 \div 7$
(5) $30028 \div 6$	(5) $40530 \div 6$	(5) $10826 \div 7$	(5) $67385 \div 7$
(6) $93732 \div 6$	(6) $53894 \div 6$	(6) $23410 \div 7$	(6) $45058 \div 7$

S.	(1)	(2)	(3)	(4)	(5)
	8)90584	8)80507	8)12200	8)20365	8)37088

T.	(1)	(2)	(3)	(4)	(5)
	8)26170	8)40693	8)37230	8)80791	8)52060

U.	(1)	(2)	(3)	(4)	(5)
	9)92736	9)11406	9)13060	9)20853	9)23026

V.	(1)	(2)	(3)	(4)	(5)
	9)36407	9)47286	9)34029	9)53800	9)63708

- W. Put down the following numbers carefully and divide each by 6, 7, 8, 9.
- (a) Seventy thousand two hundred and ninety-eight.
 - (b) Forty-three thousand seven hundred and fifty-nine.
 - (c) Thirty-eight thousand six hundred and forty.
 - (d) Twenty-nine thousand one hundred and twelve.
 - (e) Eighty thousand seven hundred.
 - (f) Fifty-nine thousand eight hundred and sixty-seven.
 - (g) Sixty-six thousand and sixty-six.
 - (h) Forty thousand five hundred and twenty-three.

EX. 20.

A.	B.	C.	D.
(1) $27758 \div 9$	(1) $22576 \div 9$	(1) $12580 \div 10$	(1) $57238 \div 10$
(2) $30581 \div 9$	(2) $65885 \div 9$	(2) $30047 \div 10$	(2) $43895 \div 10$
(3) $67032 \div 9$	(3) $78742 \div 9$	(3) $82345 \div 10$	(3) $70051 \div 10$
(4) $15709 \div 9$	(4) $51102 \div 9$	(4) $27538 \div 10$	(4) $89429 \div 10$
(5) $24380 \div 9$	(5) $27817 \div 9$	(5) $42076 \div 10$	(5) $65380 \div 10$
(6) $50725 \div 9$	(6) $83321 \div 9$	(6) $10090 \div 10$	(6) $92878 \div 10$

E.	(1)	(2)	(3)	(4)	(5)
	11)23463	11)30058	11)45180	11)38008	11)49089

F.	(1)	(2)	(3)	(4)	(5)
	11)37958	11)67051	11)31014	11)53669	11)79298

G.	(1)	(2)	(3)	(4)	(5)
	12)13608	12)24497	12)43387	12)75298	12)64566

H.	(1)	(2)	(3)	(4)	(5)
	12)56491	12)63946	12)46734	12)69432	12)96647

- I. (1) Divide thirty-seven thousand one hundred and forty-eight, by seven.
 (2) Divide fifty-four thousand two hundred and eighty-four, by eight.
 (3) Divide seventy-five thousand two hundred and thirty-one, by nine.
 (4) Divide thirty-eight thousand seven hundred and nine, by ten.
 (5) Divide sixty-two thousand and twenty-five, by eleven.
 (6) Divide eighty-one thousand two hundred and eighty-six, by twelve.

- J. Divide each of the following numbers by 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12.

(a) 2753890	(i) 48234672	(q) 365521764
(b) 5390177	(j) 25387200	(r) 173086429
(c) 9800053	(k) 46237995	(s) 384279388
(d) 4728600	(l) 57654213	(t) 548100672
(e) 5008736	(m) 38926058	(u) 439287536
(f) 7283549	(n) 73714823	(v) 927342123
(g) 1234567	(o) 26253470	(w) 571176897
(h) 3587254	(p) 17300801	(x) 498659235

Ex. 31.

A.	B.	C.	D.
(1) $54280 \div 14$	(1) $48709 \div 22$	(1) $72867 \div 32$	(1) $48263 \div 45$
(2) $29397 \div 15$	(2) $39004 \div 24$	(2) $53249 \div 33$	(2) $72938 \div 48$
(3) $14106 \div 16$	(3) $65833 \div 25$	(3) $80605 \div 35$	(3) $32549 \div 49$
(4) $87253 \div 18$	(4) $26547 \div 27$	(4) $42753 \div 36$	(4) $25016 \div 50$
(5) $30608 \div 20$	(5) $50638 \div 28$	(5) $77428 \div 40$	(5) $13201 \div 54$
(6) $66785 \div 21$	(6) $18515 \div 30$	(6) $65284 \div 42$	(6) $60874 \div 55$

E.

- (1) Divide 465308 by 56.
- (2) Divide 887026 by 60.
- (3) Divide 103205 by 63.
- (4) Divide 234567 by 64.
- (5) Divide 808153 by 66.
- (6) Divide 720385 by 70.

F.

- (1) Divide 1432695 by 72.
- (2) Divide 3208546 by 77.
- (3) Divide 5864270 by 80.
- (4) Divide 2705395 by 81.
- (5) Divide 1231458 by 84.
- (6) Divide 7382607 by 88.

- G. (1) Divide sixty-seven thousand and forty-eight, by ninety.
 (2) Divide seventy thousand and eleven, by ninety-six.
 (3) What is the hundredth part of twenty-eight thousand five hundred?
 (4) Divide ten thousand nine hundred and twenty-three, by 108.
 (5) $87204 \div$ one hundred and ten.
 (6) Divide sixty thousand eight hundred and forty-nine, by one hundred and twenty.

- H. (1) Divide ninety-three thousand four hundred and seventy, by 132.
 (2) Divide one hundred thousand and eleven, by one hundred and forty-four.
 (3) Divide five hundred and seventeen thousand, by one hundred.
 (4) Divide three hundred and forty-five thousand six hundred and eighty-one, by seventy-two.
 (5) What is the fiftieth part of 3,264,710?
 (6) What is the 48th part of two million and twenty?

- I. (1) Divide one million two hundred thousand and fifteen, by eighty-one.
 (2) Divide five million thirty thousand and four, by sixty-three.
 (3) Divide four million seven hundred and ninety-six thousand two hundred and fifty-one, by forty-nine.
 (4) Divide seven million and seventeen, by seventy.
 (5) What is the fifty-fourth part of one million ten thousand and eleven?
 (6) What is the twenty-eighth part of six million five hundred thousand and three?

Ex. 22.

- A. (1) What is the tenth part of 2,675,387 ?
(2) If a hundred marbles are divided among four boys, how many will each get ?
(3) Find the quotient when the divisor is eight, and the dividend 4,632.
(4) How many scholars must sit in each desk if there are one hundred and twenty scholars and twenty-four desks ?
- B. (1) How much is the ninth part of a million and eight ?
(2) What number multiplied by twelve will give two thousand four hundred and ninety-six ?
(3) Divide 6,825,438 into six equal parts.
(4) If in a flock of sheep there were 3300 feet, how many sheep were there ?
- C. (1) What number is equal to the seventh part of sixty-eight thousand five hundred and twenty-three ?
(2) If the divisor is twenty, and the dividend 1,790,420, what is the quotient ?
(3) Fifty yards of cloth was divided among five persons. How many yards will each have ?
(4) If I give away 150 apples equally among four boys and six girls, what number will each get ?
- D. (1) Divide one million and a half, by four.
(2) What is the fifth part of 42,863,045 ?
(3) A man had five hundred and four pens, and divided them equally into six boxes. How many were there in each ?
(4) If twelve boys have an equal share of three hundred marbles, how many would each get ?
- E. (1) How often is eleven contained in eighty-two thousand four hundred and seventy-eight ?
(2) A thousand oranges were distributed among a number of children. If each child got two, find the number of children.
(3) James has 360 marbles, and Tom half as many more. How many have both together ?
(4) There are thirty-two thousand and forty people in a town. Suppose five persons lived in each house, how many houses are there ? Write the answer in words.
- F. (1) Find the difference between the fifth part of 8,020, and the sixth part of ten thousand and two.
(2) Divide 38,265,072, by eighty-one.
(3) If a train run one hundred and fifty miles in five hours, what is the rate per hour ?
(4) I have to put 2,016 lemons in eight boxes. How many must I put in each so as not to have more in one than another ?

- G. (1) How many nines are there in twenty-seven million fifteen thousand four hundred and thirty-five?
(2) Find the sixth part of eleven thousand and ten?
(3) If there are 4 farthings in a penny, how many pence in 87,028 farthings?
(4) John has a thousand marbles. He keeps four hundred and seventy for himself, and gives the remainder to ten boys. What number of marbles ought each boy to have?
- H. (1) Divide 347,286,954, by 8.
(2) What is a quarter of the sum of 3256 and 6744?
(3) If a draper charges twenty shillings for four yards of silk, how many shillings will one yard cost?
(4) Each boy in a class worked four sums, and there were altogether one hundred and eight sums, how many boys were there?
- L. (1) What is the twelfth part of two millions and two?
(2) If a boy walks 1,760 yards in 40 minutes, how far would he go in one minute?
(3) What is the quotient if the divisor is 7 and the dividend 207,752?
(4) A man who had four hundred and ten apples, lost fifty-nine, and then divided the rest among nine persons. How many did each receive?
- J. (1) How often may five be taken from 3575?
(2) If two shillings make a florin, how many florins in a million shillings?
(3) Divide the product of the sum and difference of 54 and 46, by eight, and write the answer in words.
(4) A gardener planted one thousand eight hundred and sixty trees in twelve rows. How many were there in a row?
- K. (1) $8,907,679 \div 11$.
(2) If a bricklayer uses 44,148 bricks in building six walls, how many more bricks would he require to build another wall exactly like the first?
(3) How often is 7 contained in half the sum of 824 and 730?
(4) If a ship sail nine hundred and fifty-nine miles in a week, how many miles is that a day?
- L. (1) Find the ninth part of the difference between 20,710 and 9,909.
(2) Add together the tenth part of a million and six times five thousand seven hundred and forty-eight.
(3) Suppose you arrange five hundred and one pins in rows of three, how many rows would there be?
(4) A gentleman had a thousand nuts. Half of them he gave to a number of girls, and a quarter of them to a number of boys. How many did each of his own five children get if he distributed the remainder among them?

Ex. 23.

A.	B.	C.	D.
(1) $1,573 \div 13$	(1) $17,466 \div 51$	(1) $17,427 \div 57$	(1) $24,440 \div 65$
(2) $4,876 \div 23$	(2) $13,409 \div 53$	(2) $37,758 \div 82$	(2) $85,419 \div 67$
(3) $3,813 \div 31$	(3) $15,898 \div 46$	(3) $44,531 \div 83$	(3) $83,171 \div 68$
(4) $9,510 \div 41$	(4) $24,467 \div 17$	(4) $56,357 \div 84$	(4) $47,279 \div 74$
(5) $4,862 \div 34$	(5) $25,228 \div 47$	(5) $55,034 \div 85$	(5) $42,750 \div 75$
(6) $5,762 \div 43$	(6) $34,002 \div 73$	(6) $49,930 \div 86$	(6) $53,841 \div 76$

E.	F.	G.
(1) Divide 68,270 by 71	(1) Divide 42,683 by 92	(1) Divide 96,230 by 69
(2) Divide 20,093 by 52	(2) Divide 12,345 by 26	(2) Divide 21,384 by 77
(3) Divide 15,236 by 93	(3) Divide 73,250 by 87	(3) Divide 30,029 by 47
(4) Divide 70,100 by 37	(4) Divide 21,123 by 29	(4) Divide 17,250 by 98
(5) Divide 25,438 by 38	(5) Divide 65,432 by 69	(5) Divide 26,537 by 59
(6) Divide 51,601 by 39	(6) Divide 34,005 by 58	(6) Divide 97,713 by 99

- H. (1) Divide twenty-seven thousand two hundred and eleven, by fifty-three.
 (2) Divide eighty thousand and fifty, by forty-six.
 (3) Divide nineteen thousand two hundred, by thirty-four.
 (4) Divide fifty thousand two hundred and sixty-nine, by sixty-two.
 (5) Divide ten thousand and ninety, by nineteen.
 (6) Divide seventy-four thousand, by forty-seven.

I.	J.	K.	L.
(1) $573,280 \div 53$	(1) $121,230 \div 46$	(1) $320,146 \div 33$	(1) $274,038 \div 61$
(2) $406,305 \div 74$	(2) $830,147 \div 19$	(2) $167,380 \div 48$	(2) $198,271 \div 76$
(3) $250,605 \div 37$	(3) $368,254 \div 17$	(3) $683,275 \div 57$	(3) $325,429 \div 85$
(4) $162,385 \div 62$	(4) $123,168 \div 26$	(4) $200,129 \div 39$	(4) $567,803 \div 86$
(5) $300,450 \div 29$	(5) $527,205 \div 73$	(5) $538,264 \div 52$	(5) $312,054 \div 93$
(6) $729,214 \div 43$	(6) $109,154 \div 92$	(6) $625,387 \div 65$	(6) $245,317 \div 94$

M. Divide each of the following numbers separately by 41, 52, 65, 76, 87, 98:

- (a) Seven hundred thousand and fifty.
 (b) Two hundred and six thousand and eleven.
 (c) One hundred thousand and ninety-seven.
 (d) Eight hundred and ninety thousand one hundred.
 (e) Three hundred and forty-five thousand two hundred and sixty-eight.
 (f) Nine hundred thousand six hundred and four.

N.	O.	P.	Q.
(1) $355,703 \div 67$	(1) $159,970 \div 34$	(1) $191,188 \div 51$	(1) $451,611 \div 78$
(2) $620,964 \div 71$	(2) $298,960 \div 37$	(2) $366,426 \div 61$	(2) $416,500 \div 85$
(3) $248,568 \div 62$	(3) $117,576 \div 41$	(3) $455,064 \div 65$	(3) $783,774 \div 87$
(4) $232,275 \div 75$	(4) $301,387 \div 43$	(4) $450,239 \div 57$	(4) $632,000 \div 79$
(5) $401,107 \div 53$	(5) $361,225 \div 46$	(5) $521,883 \div 58$	(5) $800,109 \div 89$
(6) $659,600 \div 97$	(6) $371,629 \div 47$	(6) $589,409 \div 59$	(6) $979,999 \div 98$

- R.** (1) Divide twenty-one thousand five hundred and nine, by thirty-seven.
 (2) Divide eighty-two thousand and twelve, by forty-three.
 (3) Divide fifty-nine thousand seven hundred and six, by fifty-two.
 (4) Divide twenty-seven thousand one hundred, by sixty-eight.
- S.** (1) Divide sixty-three thousand and twenty-five, by twenty-nine.
 (2) Divide ten thousand three hundred and ten, by fifty-seven.
 (3) Divide fifty-three thousand two hundred and ninety-six, by seventy-five.
 (4) Divide twenty-nine thousand and thirty, by seventy-six.
- T.** (1) Divide thirty-three thousand seven hundred and nine, by eighty-three.
 (2) Divide seventy thousand and seventy, by sixty-eight.
 (3) Divide sixty-seven thousand three hundred and forty-one, by ninety-one.
 (4) Divide fifty thousand and eight, by forty-seven.
- U.** (1) Divide forty-two thousand four hundred and three, by fifty-three.
 (2) Divide fifteen thousand and sixteen, by seventeen.
 (3) Divide twenty thousand and twenty-six, by nineteen.
 (4) Divide seventeen thousand eight hundred and ninety-five, by ninety-three.
- V.** (1) Divide twenty-one thousand and five, by seventy-four.
 (2) Divide eleven thousand and eleven, by thirteen.
 (3) Divide eighteen thousand and seventy, by seventy-three.
 (4) Divide ninety thousand eight hundred and sixty, by fifty-nine.
- W.** (1) Divide one hundred thousand two hundred and fifty, by eighty-five.
 (2) Divide one hundred and thirty-seven thousand six hundred and nineteen, by eighty-six.
 (3) Divide two hundred thousand one hundred and two, by twenty-three.
 (4) Divide four hundred and thirty-five thousand seven hundred and eighty-three, by eighty-seven.
- X.** (1) Divide 303,030, by 43.
 (2) Divide 608,007, by 95.
 (3) Divide 525,200, by 52.
 (4) Divide 720,009, by 67.
- Y.** (1) Divide 519,920, by 97.
 (2) Divide 270,027, by 27.
 (3) Divide 600,639, by 39.
 (4) Divide 631,032, by 79.
- Z.** (1) Divide 710,010, by forty-six.
 (2) Divide 908,050, by eighty-five.
 (3) Divide 500,670, by ninety-four.
 (4) Divide 376,504, by thirty-eight.

Ex. 24.

A.	B.	C.	D.
(1) 232,401 ÷ 101	(1) 557,341 ÷ 131	(1) 269,725 ÷ 115	(1) 411,280 ÷ 231
(2) 136,550 ÷ 111	(2) 492,200 ÷ 133	(2) 563,474 ÷ 125	(2) 472,115 ÷ 235
(3) 339,283 ÷ 113	(3) 272,799 ÷ 107	(3) 529,040 ÷ 136	(3) 651,977 ÷ 253
(4) 174,985 ÷ 121	(4) 206,002 ÷ 134	(4) 814,050 ÷ 201	(4) 669,263 ÷ 370
(5) 283,392 ÷ 123	(5) 582,450 ÷ 135	(5) 380,216 ÷ 232	(5) 830,194 ÷ 268
(6) 526,340 ÷ 104	(6) 609,660 ÷ 152	(6) 596,345 ÷ 205	(6) 863,809 ÷ 289

E.

- (1) Divide 74,635 by 213
- (2) Divide 61,200 by 340
- (3) Divide 84,456 by 276
- (4) Divide 96,535 by 168
- (5) Divide 87,010 by 435
- (6) Divide 70,068 by 390

F.

- (1) Divide 391,103 by 527
- (2) Divide 427,908 by 650
- (3) Divide 272,300 by 706
- (4) Divide 312,299 by 780
- (5) Divide 440,581 by 648
- (6) Divide 644,809 by 803

G.

H.

I.

J.

(1) 528,674 ÷ 387	(1) 201,478 ÷ 825	(1) 601,482 ÷ 880	(1) 286,530 ÷ 298
(2) 289,005 ÷ 468	(2) 309,256 ÷ 836	(2) 705,693 ÷ 900	(2) 305,486 ÷ 927
(3) 123,456 ÷ 555	(3) 472,593 ÷ 850	(3) 386,954 ÷ 925	(3) 100,153 ÷ 493
(4) 404,721 ÷ 580	(4) 500,601 ÷ 867	(4) 205,708 ÷ 937	(4) 276,826 ÷ 568
(5) 673,295 ÷ 675	(5) 214,368 ÷ 876	(5) 467,890 ÷ 959	(5) 429,368 ÷ 889
(6) 324,168 ÷ 791	(6) 682,147 ÷ 849	(6) 386,542 ÷ 967	(6) 534,267 ÷ 796

- K. (1) Divide ninety-four thousand one hundred and seventy-six, by three hundred and seventy-eight.
- (2) Divide eighteen thousand eight hundred, by fifty-nine.
- (3) Divide twenty-six thousand three hundred and three, by twenty-nine.
- (4) Divide seven million forty-five thousand nine hundred and thirty-two, by nine hundred and eighty-six.
- (5) Divide three hundred and ninety-six thousand four hundred and eighteen, by seventy-eight.
- (6) Divide three million one hundred and eighty-eight thousand four hundred and seventy-four, by seven hundred and seventy-nine.
- L. (1) Divide nine hundred and fifty-three thousand and twenty-one, by eight hundred and fifty-six.
- (2) Divide eight hundred and seventeen thousand nine hundred and forty-seven, by three hundred and eighty-six.
- (3) Divide ten thousand, by nine hundred and eighty-seven.
- (4) Divide ninety-eight thousand four hundred and twenty-four, by forty-six.
- (5) Divide six hundred and thirty-seven thousand five hundred and ninety, by thirty-seven.
- (6) Divide seventy-two million eight hundred and forty-five thousand five hundred and thirty-five, by nine hundred and eighty-seven.

M.	N.	O.
(1) 46,253,875 ÷ 2,304	(1) 23,469,827 ÷ 4,560	(1) 43,826,549 ÷ 3,456
(2) 12,476,530 ÷ 3,520	(2) 80,253,465 ÷ 2,709	(2) 58,053,290 ÷ 4,609
(3) 50,143,286 ÷ 1,639	(3) 36,109,240 ÷ 6,567	(3) 65,586,238 ÷ 5,283
(4) 42,583,690 ÷ 4,705	(4) 10,214,386 ÷ 5,782	(4) 12,345,679 ÷ 6,540
(5) 29,476,538 ÷ 5,247	(5) 68,047,251 ÷ 7,256	(5) 28,950,320 ÷ 4,867
(6) 83,200,014 ÷ 3,456	(6) 32,412,380 ÷ 4,694	(6) 70,268,698 ÷ 7,256

- P. (1) Divide nine hundred and sixty-two thousand seven hundred and forty-five, by four thousand eight hundred and seventy-five.
- (2) Divide eight hundred and sixty-nine million seven hundred and eighty-five thousand three hundred and twenty-one, by three hundred and sixty-four.
- (3) Divide one million and thirty-six, by three hundred and eighty-four.
- (4) Divide thirty-four million twenty-four thousand three hundred and seventy-five, by four thousand three hundred and seventy-five.
- (5) Divide two hundred and forty thousand nine hundred and eleven, by one thousand three hundred and thirty-one.
- (6) Divide one million three hundred and twenty-two thousand and ninety-nine, by twenty-four hundred and seventeen.

Q.	R.
(1) 279,386,980 ÷ 5,987	(1) 201,827,541 ÷ 4,445
(2) 400,010,294 ÷ 6,675	(2) 120,000,379 ÷ 6,593
(3) 538,123,426 ÷ 4,389	(3) 254,168,205 ÷ 5,789
(4) 725,328,536 ÷ 5,499	(4) 468,289,147 ÷ 9,887
(5) 100,200,100 ÷ 8,878	(5) 325,426,387 ÷ 8,896
(6) 833,444,505 ÷ 6,785	(6) 502,300,004 ÷ 9,598

S.
(1) 125,387,694 ÷ 72,958
(2) 301,426,543 ÷ 56,384
(3) 246,107,359 ÷ 67,853
(4) 412,368,201 ÷ 49,278
(5) 670,532,450 ÷ 85,199
(6) 368,279,103 ÷ 39,487

- T. (1) Divide six million seven hundred and twenty-three thousand eight hundred and sixty-four, by fifty-four thousand and eight.
- (2) What is the thousandth part of 74,627,000?
- (3) Divide 345,678,910,457, by four thousand and seventy-three.
- (4) Divide 1,992,375, by 9,625.
- U. (1) Divide thirty thousand, by 9,375.
- (2) Divide 9,998,550, by 7,842, and write the answer in words.
- (3) Divide 275,008,050, by 30,006.
- (4) Divide 99,998,001, by 9,999.

- V. (1) Divide two hundred and one million six hundred and ninety-eight thousand seven hundred and forty, by seven thousand six hundred and nine.
- (2) Divide three hundred million one hundred and one thousand, by six thousand nine hundred and thirty.
- (3) Divide four hundred and seventy million two hundred and ninety thousand and twelve, by five thousand eight hundred and seventy-six.
- (4) Divide two hundred and ninety million and one, by four thousand five hundred and sixty-seven.
- W. (1) Divide five hundred and thirty-seven million one hundred and twenty-six thousand and fifty, by seven thousand and eighty-five.
- (2) Divide one hundred and fifty-nine million and seventy thousand three hundred and eighty-six, by six thousand seven hundred and twenty-eight.
- (3) Divide two hundred and five million one hundred and sixty-eight thousand one hundred and seventy, by eight thousand five hundred and nine.
- (4) Divide seven hundred and eleven million and eight thousand and fifty-nine, by six thousand seven hundred and thirty-five.
- X. (1) Divide three thousand and fifty million twenty thousand and thirty-eight, by eighteen thousand and ninety-seven.
- (2) Divide four thousand eight hundred and six million nine hundred and thirty thousand seven hundred and five, by twenty-nine thousand six hundred and five.
- (3) Divide seven thousand and fifty million sixty-eight thousand eight hundred and thirty, by thirty thousand eight hundred and ninety.
- (4) Divide eight thousand six hundred and five million two hundred and seventy thousand and ninety-three, by forty-six thousand and eighty-seven.
- Y. (1) Divide three thousand and ninety million seven hundred and five thousand two hundred and eighty-six, by fifty-eight thousand six hundred and thirty.
- (2) Divide eight thousand six hundred and five million nine hundred and thirty thousand eight hundred and twenty-three, by sixty thousand nine hundred and fifty-eight.
- (3) Divide seven thousand nine hundred and sixty-three million eight hundred and twenty thousand and fifty, by seventy-six thousand and eighty-five.
- (4) Divide eight thousand and ninety-six million nine hundred and three thousand seven hundred and twenty, by eighty thousand nine hundred and sixty-three.

AVERAGES.

Ex. 25.

Find the average of the following numbers:—

- | | |
|---|---|
| <p>A.</p> <p>(1) 1, 3</p> <p>(2) 1, 2, 3</p> <p>(3) 3, 6, 2, 5</p> <p>(4) 4, 3, 6, 10, 12</p> <p>(5) 5, 9, 2, 6, 8, 3, 8, 7</p> <p>(6) 15, 26, 37, 13, 9</p> | <p>B.</p> <p>(1) 31, 47, 24, 18</p> <p>(2) 20, 30, 40, 50, 60</p> <p>(3) 1720, 312854</p> <p>(4) 52, 18, 17, 10, 26, 29, 2</p> <p>(5) 23, 14, 11, 9, 10, 7, 300, 19, 120</p> <p>(6) 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12</p> |
|---|---|
- C.** (1) Three parcels weighed respectively 24 lbs., 40 lbs., and 23 lbs., what was the average weight of them?
- (2) If a boy comes to school 10 minutes late on Monday, 5 on Tuesday, 15 on Wednesday, 9 on Thursday, and 1 on Friday, find the average number of minutes late during the week.
- (3) A ship made four voyages. The first was performed in 26 days, the second in 27 days, the third in 28 days, and the fourth in 27 days, what was the average length of each voyage?
- (4) If, upon measuring a tree, you found it four feet thick in one part, two feet in another, and three in another, what would you say its average thickness was?

FRACTIONAL MULTIPLICATION.

Ex. 26.

- | | |
|--|--|
| <p>A.</p> <p>(1) Multiply 80,540 by $2\frac{1}{2}$</p> <p>(2) Multiply 36,264 by $5\frac{1}{2}$</p> <p>(3) Multiply 24,016 by $4\frac{1}{2}$</p> <p>(4) Multiply 50,737 by $3\frac{1}{2}$</p> <p>(5) Multiply 47,869 by $7\frac{1}{2}$</p> <p>(6) Multiply 20,010 by $9\frac{1}{2}$</p> | <p>B.</p> <p>(1) Multiply 58,729 by $10\frac{1}{2}$</p> <p>(2) Multiply 16,387 by $11\frac{1}{2}$</p> <p>(3) Multiply 37,258 by $13\frac{1}{2}$</p> <p>(4) Multiply 28,614 by $27\frac{1}{2}$</p> <p>(5) Multiply 70,283 by $58\frac{1}{2}$</p> <p>(6) Multiply 82,130 by $75\frac{1}{2}$</p> |
|--|--|

FRACTIONAL DIVISION.

Ex. 27.

- | | |
|---|--|
| <p>A.</p> <p>(1) Divide 42,674 by $2\frac{1}{2}$</p> <p>(2) Divide 30,280 by $3\frac{1}{2}$</p> <p>(3) Divide 17,953 by $5\frac{1}{2}$</p> <p>(4) Divide 58,696 by $7\frac{1}{2}$</p> <p>(5) Divide 26,388 by $8\frac{1}{2}$</p> <p>(6) Divide 17,250 by $10\frac{1}{2}$</p> | <p>B.</p> <p>(1) Divide 87,247 by $11\frac{1}{2}$</p> <p>(2) Divide 38,803 by $12\frac{1}{2}$</p> <p>(3) Divide 73,275 by $9\frac{1}{2}$</p> <p>(4) Divide 17,654 by $10\frac{1}{2}$</p> <p>(5) Divide 50,209 by $12\frac{1}{2}$</p> <p>(6) Divide 10,058 by $8\frac{1}{2}$</p> |
|---|--|

EXAMINATIONS IN THE SIMPLE RULES.

Ex. 28.

- A. (1) Add together 60, 107, 4, and a thousand; then take this sum from two thousand and eleven.
 (2) What is the half of four thousand and twenty?
 (3) How many legs have two cats, three dogs, and four hens?
 (4) Square six thousand seven hundred, that is, multiply it by itself. Write the answer in words.
- B. (1) Find the difference between eight thousand and seven, and seven thousand nine hundred and eight.
 (2) If there are twelve children in a family, and five are boys, how many more girls are there than boys?
 (3) What is the fifth part of nine thousand and ten?
 (4) I have twenty marbles. If I win ten in one game and then seventeen in another, and afterwards lose a dozen, how many have I then?
- C. (1) Two numbers added together just make a thousand. If one of them is four hundred and ninety-three, what is the other?
 (2) Write out in words the product of 47,638 and 5,704.
 (3) I was born in the year 1809. What is my age now (1877)?
 (4) Subtract one hundred and seventy-two thousand and nineteen, from two hundred and three thousand one hundred and nine.
- D. (1) The sum of two numbers is twelve. If one of the numbers is nine, find the *difference* of the numbers.
 (2) $89,068 + 59 + 8,086,593 + 4,787 + 66 + 936 + 7 + 2,345,678$.
 (3) A basket is full of apples and pears. There are 57 pears and 23 more apples than pears, how many in all are there?
 (4) Find the cube of 13, that is $13 \times 13 \times 13$.
- E. (1) Take the amount of six thousand and ten; twenty-seven; two hundred thousand; one thousand and fifty-four; eight; and fifty-seven thousand two hundred and ninety-six; from a million, and write the answer in words.
 (2) A farmer bought altogether a hundred horses, cows, and sheep. There were thirteen horses and thirty-seven cows. What number of sheep did he buy?
 (3) If my sister was born in the year 1859, and she is eight years older than I am, what year was I born in?
 (4) Divide the product of seven hundred and five, and two hundred and ninety-eight, by their difference.

- F.** (1) From the sum of 64, 3009 and 5, take 88. •
(2) Find the continued product of 2, 3, 4, 5, 6 and 7.
(3) What is the twentieth part of 5,803,290?
(4) How many books may be made, each containing ninety-six leaves, from three hundred and forty-eight packets of paper, each three thousand and sixteen leaves?
- G.** (1) If twenty times 3,865 is added to the half of 7,136, what is the sum? Write the answer in words.
(2) Subtract nine thousand six hundred and one, from two million ten thousand seven hundred.
(3) In a town of ten thousand inhabitants there are nine hundred and eighty-seven houses, how many people on an average are there in each house?
(4) How many panes of glass in two windows, each eight panes long and four broad?
- H.** (1) Add together 403, 7006, 314159, and 27182. Multiply the sum by 109, and write the product in words.
(2) How many pounds of sugar will a grocer need if he makes 1,279 parcels, each containing twelve pounds?
(3) Find the sum of four million three hundred thousand seven hundred and two; six million seventy thousand five hundred and six; and three hundred and forty-one thousand three hundred and eighteen.
(4) What is the number of words in a dictionary of four hundred and fifty double columns, if each single column contains forty-five words?
- I.** (1) Subtract ninety thousand nine hundred and ninety-nine from a million and a half; then divide the remainder by thirty-three.
(2) Multiply sixty-seven thousand and twelve, by eight thousand nine hundred and seven, and write the product in words.
(3) The quotient being 15,238, the remainder 86, and the divisor 144, find the dividend.
(4) A street is thirty-one thousand nine hundred and eighty-six feet in length. Houses are built along each side, each of which takes up a space of thirty-six feet in length. How many houses are there?
- J.** (1) How many bags of marbles, each containing twenty-nine, can be filled from a heap of one thousand three hundred and five?
(2) Multiply the difference between 30,974 and 29,067 by thirty-five.
(3) Divide one million three hundred and seventy-four thousand two hundred and eighty-four, by nine hundred and fifty-seven.
(4) The product of two numbers is 1,270,374, half of one of them is 3,129. What is the other number?

- K.** (1) Add together all the numbers from 1 to 20 (inclusive), and then multiply this sum by itself.
 (2) Find the tenth part of the difference between 101 and a quarter of a million.
 (3) How much is ten thousand and seventy times 4,380?
 (4) What is the continued product of 480, 5006, and seventy-nine?
- L.** (1) Subtract nine hundred and nine, from twenty-one thousand and ten, and then divide the remainder by seven.
 (2) Find the number which subtracted from 80,000 leaves 57,735, and divide it by 365.
 (3) What is the product of the sum and difference of two hundred and thirty-eight thousand four hundred and twenty-eight, and one hundred and five thousand and sixty-nine?
 (4) What is that number which multiplied by 13 will give 59,514?
- M.** (1) Twenty-five years ago, a man was four times as old as his son, whose present age is 33: what is the present age of the father?
 (2) Find the sum of 756,030 and 655,226, and also their difference, and divide the sum by the difference.
 (3) If there are 1,760 yards in a mile, how many yards are there in seventeen hundred and sixty miles? Write the answer in words.
 (4) Find the multiplicand when the multiplier is twenty and the product eighty-nine thousand seven hundred.
- N.** (1) Subtract the product of 16, 24, and thirty-seven, from that of 18, 24, and 42.
 (2) The product of two numbers is twenty thousand. If the multiplicand is 200, what is the multiplier?
 (3) If 112 lbs. make a hundredweight, how many hundredweights are there in seven million eight hundred and forty-one thousand two hundred and thirty-two?
 (4) Add together 4,578, 6,319, 7,049, and 9,119, subtract their sum from 28,209, multiply the remainder by 39, and divide the product so obtained by 143.
- O.** (1) Thirty years ago, a man was three times as old as his son, whose present age is 45: how old is the father?
 (2) How much is the difference between 628,716 and 79,019 greater than the sum of 56,095, 2,800, 10,009, 7,097, 163, 3,000 and 90,829?
 (3) A boy having 100 marbles, lost 25 of them at play, and then won 18, after which he lost 28: how many had he left?
 (4) Find the sum, difference, product, and quotient of 9,765,625 and 78,125.

- P. (1) What is the continued product of 5,090, 87, and 2,560? Write the answer in words.
(2) Add five times the sum of 15, and 85, to half their difference.
(3) Tom has fifty marbles, Sam thirteen more than Tom, and Herbert half-a-dozen less than Sam: how many have they together?
(4) If you divide twenty apples between a boy and a girl so that the girl has six more than the boy, how many must you give to each?
- Q. (1) Multiply five hundred and seventy thousand four hundred and ninety-two, by seven thousand nine hundred and eighty-five.
(2) If my step is two feet long, how many steps shall I take in walking a mile and a half? (1 mile = 5,280 feet.) Write the answer in words.
(3) Divide 100,000,000,000, by 31,415,926.
(4) One half of the sum of two numbers is 800, one half the difference of the same number is 200. What are the numbers?
- R. (1) Multiply thirty million and thirty thousand, by four hundred thousand and eighty, and divide the result by six hundred and seventy-two thousand.
(2) Subtract 190,109,979 from 1,201,010,986, and write the difference in words.
(3) There were one hundred and fifty boys in a school. The number of girls was twenty-nine less than the boys. Find the total number of scholars.
(4) Two numbers added together make ten thousand. If one number is three thousand five hundred and ninety, find the product of the two numbers.
- S. (1) Add together the sum, difference, and product of 1,010 and 990. Write the answer in words.
(2) If a man eat two pounds of beef a day, how many pounds will be required to supply a regiment of one thousand two hundred and sixty soldiers for a week?
(3) What is the difference between a quarter of a million, and eighty-seven times four thousand and nine?
(4) If a suit of clothes takes $4\frac{1}{2}$ yards, how many suits could a tailor make out of a piece of cloth measuring 225 yards?
- T. (1) Multiply 6,309,508 by itself.
(2) Write out in words the number which, when divided by 125, gives as quotient 350 and remainder 124.
(3) A man died in 1873, aged 94; his son died in 1827, aged 17; how old was the father when the son was born?
(4) A is 27 years older than B, and 15 years younger than C, who is 54 years of age. D is as old as the sum of A and B's ages. How much older or younger is C than D?

REDUCTION OF MONEY.

Ex. 29.

Reduce to shillings:—

A.	£	B.	£	C.	£	D.	£	s.	E.	£	s.	F.	£	s.
(1)	1	(1)	10	(1)	67	(1)	3	1	(1)	43	10	(1)	120	13
(2)	3	(2)	13	(2)	89	(2)	14	5	(2)	56	17	(2)	200	10
(3)	4	(3)	16	(3)	85	(3)	10	2	(3)	89	14	(3)	526	17
(4)	5	(4)	17	(4)	90	(4)	10	10	(4)	28	19	(4)	268	19
(5)	8	(5)	20	(5)	93	(5)	27	15	(5)	77	17	(5)	311	16
(6)	9	(6)	25	(6)	100	(6)	30	12	(6)	90	9	(6)	500	10

Reduce to pence:—

G.	s.	H.	s.	d.	I.	s.	d.	J.	s.	d.	K.	£	s.	d.	L.	£	s.	d.
(1)	2	(1)	1	3	(1)	7	5	(1)	10	6	(1)	2	3	4	(1)	16	15	4
(2)	7	(2)	2	7	(2)	8	9	(2)	11	5	(2)	4	7	6	(2)	24	19	11
(3)	9	(3)	5	4	(3)	6	10	(3)	13	10	(3)	5	8	9	(3)	53	10	10
(4)	10	(4)	8	6	(4)	9	11	(4)	15	8	(4)	7	10	5	(4)	68	13	8
(5)	13	(5)	4	9	(5)	7	9	(5)	17	6	(5)	8	13	7	(5)	75	18	9
(6)	19	(6)	3	11	(6)	8	10	(6)	18	11	(6)	9	15	10	(6)	43	15	5

Reduce to farthings:—

M.	d.	N.	s.	d.	O.	£	s.	d.	P.	£	s.	d.	Q.	£	s.	d.
(1)	7	(1)	1	0 $\frac{1}{2}$	(1)	1	4	8	(1)	39	16	9 $\frac{1}{2}$	(1)	259	13	4 $\frac{1}{2}$
(2)	8 $\frac{1}{2}$	(2)	2	1 $\frac{1}{2}$	(2)	9	10	5 $\frac{1}{2}$	(2)	48	15	2 $\frac{1}{2}$	(2)	106	11	7 $\frac{1}{2}$
(3)	9 $\frac{1}{2}$	(3)	4	6 $\frac{1}{2}$	(3)	13	12	11 $\frac{1}{2}$	(3)	96	18	11	(3)	312	15	9 $\frac{1}{2}$
(4)	10	(4)	10	9 $\frac{1}{2}$	(4)	53	18	9 $\frac{1}{2}$	(4)	15	19	10 $\frac{1}{2}$	(4)	429	12	6
(5)	11 $\frac{1}{2}$	(5)	11	0 $\frac{1}{2}$	(5)	74	17	7 $\frac{1}{2}$	(5)	87	13	2	(5)	513	10	11 $\frac{1}{2}$
(6)	11 $\frac{1}{2}$	(6)	15	10 $\frac{1}{2}$	(6)	68	13	8 $\frac{1}{2}$	(6)	50	0	0 $\frac{1}{2}$	(6)	800	11	10 $\frac{1}{2}$

Reduce to halfpence:—

Reduce to threepences:—

R.	s.	d.	S.	£	s.	d.	T.	s.	d.	U.	£	s.	d.	V.	£	s.	d.
(1)	1	6	(1)	10	0	0	(1)	1	0	(1)	1	0	3	(1)	39	17	0
(2)	1	9	(2)	20	15	0	(2)	2	3	(2)	2	15	9	(2)	57	13	6
(3)	1	10	(3)	13	11	7	(3)	5	0	(3)	7	10	6	(3)	100	0	0
(4)	3	10 $\frac{1}{2}$	(4)	58	16	0 $\frac{1}{2}$	(4)	6	6	(4)	10	11	0	(4)	70	0	9
(5)	4	11	(5)	39	15	11	(5)	10	3	(5)	15	0	6	(5)	83	19	3
(6)	8	11 $\frac{1}{2}$	(6)	89	18	10 $\frac{1}{2}$	(6)	11	9	(6)	41	19	3	(6)	250	1	9

Reduce to sixpences:—

Reduce to groats:—

W.		X.	£	s.	d.	Y.	£	s.	d.	Z.	
(1)	10 guineas	(1)	67	13	0	(1)	1	12	0	(1)	£100 0s. 8d.
(2)	15 guineas	(2)	205	10	6	(2)	3	10	8	(2)	300 sixpences
(3)	£20	(3)	179	12	0	(3)	4	17	0	(3)	5,287 shillings
(4)	17s. 6d.	(4)	600	0	0	(4)	10	10	4	(4)	15 guineas
(5)	£100 10s.	(5)	483	17	6	(5)	18	16	8	(5)	£389 18s. 8d.
(6)	101 guineas	(6)	500	0	6	(6)	90	18	4	(6)	1,000 guineas

Ex. 30.

Reduce to pounds:—

A. Shillings.	B. Shillings.	C. Pence.	D. Pence.	E. Pence.
(1) 50	(1) 2,587	(1) 391	(1) 2,768	(1) 80,275
(2) 108	(2) 13,826	(2) 1,025	(2) 89,254	(2) 189,076
(3) 287	(3) 59,251	(3) 2,164	(3) 17,309	(3) 258,784
(4) 1,395	(4) 41,100	(4) 3,380	(4) 63,012	(4) 427,168
(5) 2,588	(5) 73,295	(5) 2,957	(5) 40,267	(5) 398,799
(6) 7,149	(6) 20,010	(6) 6,283	(6) 58,933	(6) 830,910

F. Farthings.	G. Farthings.	H. Farthings.	I. Halfpence.	J. Halfpence.
(1) 6,297	(1) 23,736	(1) 107,386	(1) 286	(1) 5,328
(2) 8,395	(2) 59,102	(2) 382,143	(2) 908	(2) 4,769
(3) 7,200	(3) 70,264	(3) 576,071	(3) 927	(3) 3,825
(4) 2,989	(4) 28,528	(4) 629,528	(4) 985	(4) 6,178
(5) 9,352	(5) 67,886	(5) 479,109	(5) 1,479	(5) 8,389
(6) 6,748	(6) 95,497	(6) 882,654	(6) 3,653	(6) 9,767

K. Guineas.	L. Crowns.	M. Florins.	N. Sixpences.
(1) 47	(1) 501	(1) 364	(1) 108
(2) 308	(2) 869	(2) 289	(2) 450
(3) 576	(3) 773	(3) 538	(3) 861
(4) 499	(4) 1,487	(4) 1,203	(4) 287
(5) 1,730	(5) 1,596	(5) 2,569	(5) 3,259
(6) 8,605	(6) 3,805	(6) 5,838	(6) 4,785

O. Groats.	P. Threepences.
(1) 280	(1) 526
(2) 127	(2) 389
(3) 350	(3) 672
(4) 463	(4) 1,081
(5) 1,780	(5) 2,507
(6) 2,979	(6) 3,896

- Q. (1) How many farthings are there in £2,070 10s. 1d.?
 (2) Reduce to £ s. d. two hundred thousand farthings.
 (3) How many pence in fifty-seven guineas?
 (4) Express in £ s. d. one hundred and twelve thousand and seven halfpence.
 (5) Reduce £6,831 10s. 8d. to twopences.
 (6) Change 82,610 fourpences into £ s. d.
- R. (1) In twelve half-guineas, how many farthings are there?
 (2) Reduce 201,466 pence to florins.
 (3) How many threepences are equal to one hundred and twenty fourpences?
 (4) If I exchange a hundred pounds for a number of half-crowns, how many ought I to receive?
 (5) Reduce £10,015 19s. 1½d. to farthings.
 (6) How many halfpence are there in half-a-million farthings?

EXAMINATIONS IN REDUCTION—(MONEY).

Ex. 31.

- A.** (1) Reduce one hundred and forty-seven pounds seventeen shillings and sixpence halfpenny to farthings.
 (2) How many halfpennies are there in £36 3s. 4½d.?
 (3) Reduce three hundred and fifteen half-guineas to half-crowns.
 (4) What should I have to pay for half-a-million articles, at a farthing each?
- B.** (1) How many farthings in £59 18s. 6½d.?
 (2) What is the value of a thousand fourpenny pieces?
 (3) Reduce 30,724,689 farthings to £ s. d.
 (4) How many half-guineas are there in three hundred and four million nineteen thousand eight hundred and fifty-six farthings?
- C.** (1) What number of farthings is equal in value to seventy-two pounds eleven shillings and fourpence farthing?
 (2) Reduce seventeen half-crowns to halfpence.
 (3) How many half-crowns are there in £2,049 17s. 6d.?
 (4) Reduce sixteen thousand two hundred and fifty-four pence to guineas.
- D.** (1) Bring four thousand two hundred and ninety-eight farthings to pounds.
 (2) Reduce £10,059 11s. 11½d. to farthings, and write the answer in words.
 (3) Find the difference between 19,008 farthings and 4,801 half-crowns.
 (4) A person bought a number of books, for which he paid 3d. each. If his bill amounted to £57 19s. 9d., how many books did he buy?
- E.** (1) In one hundred and one guineas, how many sixpences?
 (2) Take two hundred thousand pence, from fifty thousand one hundred and thirty-two half-crowns.
 (3) Change 29,103 florins into pennies, and write the answer in words.
 (4) How many half-guineas are there in five hundred and thirty-seven half-crowns?
- F.** (1) Reduce seventy-nine thousand and twelve pounds and sixpence, to twopences.
 (2) Reduce one million one hundred and three halfpence to £ s. d.
 (3) How many eightpenny reading-books can I buy with a ten pound note?
 (4) A tailor bought a piece of cloth for 50 guineas. If the cloth were worth half-a-crown a yard, what was the length of the piece?

- G. (1) Reduce 8,267 half-guineas to halfpence, and write the answer in words.
 (2) Bring thirty million one hundred and forty thousand one hundred and sixty farthings to crowns.
 (3) Change one hundred and sixty guineas into pounds.
 (4) A butcher sold a piece of beef for thirteen shillings and three-halfpence. What did the joint weigh if he charged tenpence halfpenny per lb.?
- H. (1) Reduce 825,079 twopences to £ s. d.
 (2) Reduce a thousand and eleven groats to florins.
 (3) Find the value of 98,765 lead pencils at three farthings each.
 (4) From ten thousand half-crowns, take eighteen thousand and eighty sixpences.
- I. (1) Reduce two thousand six hundred and seventy-three half-guineas to farthings.
 (2) A gentleman gave on an average to each of his workmen £1 5s. 6½d. The total amount paid in wages was £127 14s. 2d., how many men did he employ?
 (3) Express in £ s. d. two and a quarter million farthings.
 (4) A boy has seven hundred and eighteen half-crowns, and his sister has eight hundred and seventeen florins. How much richer is one than the other?
- J. (1) How many ninepences are there in nine pounds?
 (2) Reduce 353,304 halfpence to guineas.
 (3) A man has in his purse 5 sovereigns, 7 half-sovereigns, 3 half-crowns, 4 shillings, and 11 sixpences; how many fourpenny pieces could he get for his money?
 (4) If a toll collector charges a halfpenny each to every one who passes over his bridge, how many people will have crossed when he has received a thousand pounds?
- K. (1) If marbles are sold at the rate of 1½d. a score, how many shall I get for a guinea and a half and three farthings?
 (2) A had 3,640 fourpenny pieces, B had 28,640 halfpence; which had the most money, and by how much?
 (3) Take 32,857 sixpences from 23,088 half-guineas.
 (4) How many guineas, sovereigns, half-crowns, and shillings, there being an equal number of each, are there in £2,492?
- L. (1) From 7,000 crowns take 6,060 pence, and give the answer in £ s. d.
 (2) How long will a person who lays by five shillings a week be in saving 50 guineas?
 (3) Express the difference between eight thousand and eighty half-crowns, and sixteen thousand and six sixpences in £ s. d.
 (4) A clergyman making a collection for the poor people in his parish receives in all 12 guineas, 8 half-guineas, 6 half-crowns, 4 sixpences, and 3 half-pence, and distributes the money among them, giving 2s. 4½d. to each; find the number of poor persons relieved.

COMPOUND ADDITION—(MONEY).

Ex. 32.

A.	(1)	(2)	(3)	(4)	B.	(1)	(2)	(3)	(4)
	d.	d.	d.	d.		d.	d.	d.	d.
	4	8	2	5		8½	4½	2½	5½
	2	4	4½	3		2½	5	4½	6½
	3	2	3	4½		6	3½	5½	2½
	1	5½	4½	3½		5½	6½	6	4½

C.	(1)	(2)	(3)	(4)	D.	(1)	(2)	(3)	(4)
	d.	d.	d.	d.		d.	d.	d.	d.
	6½	3½	5½	7		8½	9½	6½	5½
	3½	5½	3½	4½		10	7½	11½	9½
	7½	8	6½	8½		4½	11½	10½	11½
	5½	6½	7½	9½		9½	5½	8	10½

Ex.	(1)	(2)	(3)	(4)	(5)	(6)	
<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>
4	5½	9	10½	6	9½	8	7 10½
5	6½	4	6½	7	11½	5	9
3	7	7	8½	9	6½	6	10½
7	4½	2	11	8	10	6	9½
8	9	9	3½	5	7½	4	9½

- F. (1) 3s. 4½d. + 9s. 7½d. + 8s. 11½d. + 5s. 6½d. + 2s. 10d. + 9s. 7½d.
 (2) 9s. 3d. + 7s. 8½d. + 9s. 10½d. + 6s. 11½d. + 5s. 11½d. + 4s. 10½d.
 (3) Seven shillings and five pence + three shillings and a farthing + nine shillings and sixpence halfpenny + six shillings and eleven pence three farthings + tenpence farthing.
 (4) 10s. 4½d. + 12s. 10½d. + 15s. 7½d. + 13s. 6½d. + 11s. 5½d. + 14s. 10½d.
 (5) 13s. 5½d. + 15s. 7½d. + 10s. 8½d. + 9s. 9d. + 16s. 10½d. + 18s. 11½d.
 (6) 18s. 10½d. + 17s. 6½d. + 19s. 10½d. + 11s. 11½d. + 17s. 6d. + 13s. 3½d.

G.	(1)	(2)	(3)	(4)	(5)
s.	d.	s.	d.	s.	d.
14	5½	15	8½	13	9½
16	9½	10	4½	15	10½
8	6½	18	10½	17	6½
10	11	13	8½	16	8½
12	8½	15	6	18	9½

- (6) Add together 14s. 9½d.; 15s. 11½d.; 17s. 8½d. 16s. 10½d.; 18s. 6d.; and 19s. 0½d.

H.	(1)	(2)	(3)	(4)
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
	7 10 4½	4 15 5½	8 13 2½	7 17 5½
	8 8 11½	6 10 4	9 17 6	9 18 10½
	9 16 5	9 16 9½	7 15 10½	8 6 11½
	8 13 9½	8 12 10½	6 12 9½	9 14 7½
	6 14 7½	7 0 11½	9 19 4½	8 13 9½

L	(1)	(2)	(3)	(4)
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
	12 8 10½	43 3 8½	12 13 10	53 10 8½
	9 13 7½	26 14 3½	43 9 8½	60 17 4½
	25 17 11½	55 18 7½	38 17 6½	4 19 1
	30 0 8½	39 15 9½	69 10 0½	73 13 9½
	42 16 6½	60 11 11	12 16 8½	29 14 6½
	20 11 5	17 9 6½	44 14 4	88 18 8

- (1) £26 13s. 4½d. + £9 8s. 11d. + 10s. 9d. + £2 18s. + 17s. 1½d. + 11½d.
 (2) 4½d. + £87 0s. 1d. + £5 + £18 17s. 7½d. + £39 16s. + 18s. 3½d.
 (3) £10 12s. 6½d. + £33 15s. 11d. + £58 13s. + £63 0s. 0½d. + 6½d. + £9 9s. 9d.
 (4) £8 10s. 11d. + 5½d. + 17s. + £39 + £83 18s. 9½d. + £54 13s. 7½d.
 (5) 15s. 2½d. + 11d. + £18 18s. 10½d. + £90 0s. 4½d. + £47 18s. 8½d. + 13s. 10½d.
 (6) Add together:—three farthings; elevenpence halfpenny; nine shillings and three farthings; five pounds and sixpence; and twenty pounds twelve shillings and sevenpence farthing.

K.	(1)	(2)	(3)	(4)
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
	48 2 10½	37 15 4½	25 13 10½	32 18 7½
	16 0 ¾	68 19 5	9 18 6	14 9 ¾
	90 19 11	89 10 9½	8 3½	68 10 3½
	9½	60 13 3½	10 19 11½	11½
	33 18 6½	47 15 7½	32 16 4½	17 8½
	87 15 10½	58 14 6½	68 13 7½	97 16 10½

L.	(1)	(2)	(3)	(4)
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
	53 13 7½	28 16 5½	67 13 8½	82 10 4½
	27 15 9½	97 14 10½	43 17 10½	76 13 9½
	32 11 10½	33 13 7½	27 19 11½	39 18 7½
	68 14 7½	46 18 11½	38 13 7½	53 19 8½
	58 12 8½	72 12 8½	43 19 8½	68 17 11½
	70 17 11½	69 14 9½	72 18 10½	44 16 10½

COMPOUND ADDITION.

M.	(1)	(2)	(3)	(4)
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
	28 13 6½	75 10 8½	83 13 3½	82 17 10½
	87 15 8½	69 17 5½	44 14 4½	89 16 4½
	53 19 10½	42 18 6½	55 15 5½	57 10 1½
	29 7 9½	33 12 10½	66 16 6½	68 19 7½
	46 12 8½	50 13 7½	77 0 0½	70 13 3½
	63 14 9½	90 19 4½	58 18 11½	45 12 8½

N.	(1)	(2)	(3)	(4)
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
	26 14 5½	87 10 8½	80 11 10½	85 14 6
	38 15 6½	42 12 6½	79 12 4½	27 18 10½
	47 13 10½	58 17 10½	20 13 5½	18 19 6½
	53 18 11½	89 18 8½	15 17 11½	53 10 8½
	16 11 9	40 13 1	60 15 9½	49 17 7½
	22 17 7½	67 15 5½	57 14 2½	88 16 11½

O.	(1)	(2)	(3)	(4)
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
	72 18 9½	25 15 9½	83 19 5½	80 19 10½
	43 16 10½	38 17 6½	48 15 11½	59 17 9½
	17 10 5½	43 18 11½	53 17 8½	76 13 7½
	30 15 11½	30 19 10½	29 10 9½	45 14 6½
	48 19 4½	15 16 4	80 14 10½	28 18 8½
	93 13 8½	87 10 5½	76 16 6½	69 15 11

P.	(1)	(2)	(3)	(4)
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
	29 16 8½	85 15 9½	73 18 6½	25 13 8½
	35 15 7½	47 19 7½	49 17 5½	92 16 9½
	47 10 10½	52 16 11½	80 10 11½	43 10 5½
	68 18 9½	68 17 8½	52 19 10½	17 18 7½
	52 13 5½	16 11 10½	18 18 9½	58 17 10½
	45 17 6½	93 15 6½	76 10 8½	66 16 6½

Q.	(1)	(2)	(3)	(4)
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
	45 16 5½	20 17 3½	73 15 8½	89 15 10½
	87 10 11½	89 13 8½	48 16 10½	47 18 6½
	29 15 8½	37 16 9½	52 18 11½	53 13 9½
	16 17 7½	42 15 10½	69 10 10½	64 14 11½
	74 14 10½	48 18 7½	37 17 5½	98 17 8½
	53 18 9½	77 16 4½	84 14 9½	59 16 10½

- B.** (1) Add together,—ten pounds twelve shillings and a halfpenny; seventeen shillings and eight pence three farthings; five pounds; sixteen pounds and eleven pence; two pounds thirteen shillings and four pence farthing; and ten pence three farthings.
- (2) Add together,—fifteen pounds ten shillings; fifteen shillings and three pence; thirty-two pounds and five pence farthing; eleven pence halfpenny; forty pounds seventeen shillings and six pence; and eleven shillings and four pence.
- (3) £18 17s. $4\frac{1}{2}d.$ + 5s. $10\frac{1}{2}d.$ + £52 10s. 6d. + £1 0s. $11\frac{3}{4}d.$ + £29 16s. $5\frac{1}{2}d.$ + £47 18s. $9\frac{1}{2}d.$
- (4) Find the sum of,—forty-two pounds and a penny; seventeen shillings and ten pence three farthings; seven pounds ten shillings and three halfpence; fifty pounds fifteen shillings and nine pence three farthings; one shilling and eight pence; and six pounds six shillings and six pence halfpenny.
- S.** (1) Add together,—fourteen pounds ten shillings and a farthing; nine pence halfpenny; one pound nineteen shillings; sixteen shillings and four pence three farthings; one hundred pounds; and fifty-nine pounds thirteen shillings and ten pence farthing.
- (2) What is the amount of,—twenty pounds; five pounds and seven pence; six pence three farthings; eighteen shillings and eleven pence halfpenny; seventy-seven pounds ten shillings; and nine pounds nineteen shillings and six pence farthing?
- (3) £24 15s. $5\frac{1}{2}d.$ + £47 13s. $8\frac{3}{4}d.$ + £53 10s. $11\frac{1}{2}d.$ + £16 8s. $7\frac{1}{2}d.$ + £85 19s. $9\frac{1}{2}d.$ + £64 18s. $10\frac{1}{2}d.$
- (4) Add up,—eight pounds eighteen shillings and eight pence farthing; nineteen pounds and ten pence three farthings; sixteen shillings and eleven pence; fifty-six pounds fifteen shillings and four pence halfpenny; seven pence halfpenny; and sixty pounds and nine pence farthing.
- T.** (1) Add together,—twenty-six pounds thirteen shillings and four pence three farthings; seven pence three farthings; ninety-eight pounds seventeen shillings; eighteen shillings and eleven pence halfpenny; seventy pounds and eight pence farthing; and forty-five pounds thirteen shillings and three farthings.
- (2) Find the sum of,— $10\frac{1}{2}d.$; 17s. $0\frac{1}{2}d.$; £89 13s. $6\frac{1}{2}d.$; 19s. $11\frac{1}{2}d.$; $9\frac{3}{4}d.$; and £57 18s. $7\frac{1}{2}d.$
- (3) £45 14s. $7\frac{1}{2}d.$ + £38 19s. $8\frac{1}{2}d.$ + £57 18s. $11\frac{1}{2}d.$ + £64 17s. $10\frac{3}{4}d.$ + £38 18s. $9\frac{1}{2}d.$ + £70 10s. $11\frac{1}{2}d.$
- (4) Add together,—£30 0s. 1d.; 11s. $11\frac{3}{4}d.$; £10; £73 17s.; 16s. $10\frac{1}{2}d.$; and £88 18s. $8\frac{1}{2}d.$

U.	(1)	(2)	(3)	(4)
	$\begin{array}{r} 125\ 13\ 10\frac{1}{2} \\ 67\ 10\ 8\frac{1}{2} \\ 204\ 17\ 9\frac{1}{2} \\ 618\ 14\ 2 \\ 8\ 7\ 5\frac{1}{2} \\ 24\ 10\ 7\frac{1}{2} \\ 700\ 15\ 4\frac{1}{2} \end{array}$	$\begin{array}{r} 856\ 14\ 7 \\ 105\ 6\ 6\frac{1}{2} \\ 98\ 10\ 11\frac{1}{2} \\ 7\ 18\ 3\frac{1}{2} \\ 580\ 15\ 8\frac{1}{2} \\ 33\ 9\ 2\frac{1}{2} \\ 4\ 19\ 1 \end{array}$	$\begin{array}{r} 425\ 10\ 5\frac{1}{2} \\ 8\ 7\ 7\frac{1}{2} \\ 500\ 14\ 10\frac{1}{2} \\ 73\ 18\ 9\frac{1}{2} \\ 280\ 11\ 11 \\ 66\ 16\ 3\frac{1}{2} \\ 718\ 2\ 4\frac{1}{2} \end{array}$	$\begin{array}{r} 683\ 15\ 8\frac{1}{2} \\ 820\ 11\ 11 \\ 415\ 8\ 2\frac{1}{2} \\ 8\ 19\ 5\frac{1}{2} \\ 93\ 10\ 1\frac{1}{2} \\ 1\ 16\ 9\frac{1}{2} \\ 218\ 15\ 7\frac{1}{2} \end{array}$
V.	(1)	(2)	(3)	(4)
	$\begin{array}{r} 23\ 14\ 5\frac{1}{2} \\ 88\ 17\ 7\frac{1}{2} \\ 109\ 18\ 6\frac{1}{2} \\ 297\ 15\ 8\frac{1}{2} \\ 826\ 13\ 10\frac{1}{2} \\ 72\ 18\ 5\frac{1}{2} \\ 9\ 14\ 9 \end{array}$	$\begin{array}{r} 18\ 17\ 6\frac{1}{2} \\ 903\ 19\ 5 \\ 6\ 8\ 9\frac{1}{2} \\ 52\ 13\ 10\frac{1}{2} \\ 549\ 7\ 7\frac{1}{2} \\ 21\ 12\ 4\frac{1}{2} \\ 6\ 8\ 2 \end{array}$	$\begin{array}{r} 45\ 10\ 4\frac{1}{2} \\ 8\ 18\ 10 \\ 587\ 9\ 6\frac{1}{2} \\ 10\ 18\ 9\frac{1}{2} \\ 285\ 4\ 11 \\ 21\ 7\ 3\frac{1}{2} \\ 103\ 11\ 7 \end{array}$	$\begin{array}{r} 39\ 16\ 6\frac{1}{2} \\ 207\ 13\ 5\frac{1}{2} \\ 8\ 17\ 1 \\ 53\ 14\ 8\frac{1}{2} \\ 700\ 0\ 11\frac{1}{2} \\ 82\ 11\ 9\frac{1}{2} \\ 9\ 9\ 3\frac{1}{2} \end{array}$
W.	(1)	(2)	(3)	(4)
	$\begin{array}{r} 6\ 7\ 8\frac{1}{2} \\ 17\ 8\ 10\frac{1}{2} \\ 390\ 10\ 11 \\ 4\ 18\ 6\frac{1}{2} \\ 78\ 15\ 7\frac{1}{2} \\ 427\ 18\ 6\frac{1}{2} \\ 59\ 9\ 9\frac{1}{2} \end{array}$	$\begin{array}{r} 7\ 18\ 9\frac{1}{2} \\ 803\ 7\ 5\frac{1}{2} \\ 68\ 15\ 8\frac{1}{2} \\ 750\ 9\ 7\frac{1}{2} \\ 6\ 13\ 3\frac{1}{2} \\ 29\ 14\ 11 \\ 100\ 11\ 10\frac{1}{2} \end{array}$	$\begin{array}{r} 5\ 11\ 7 \\ 8\ 18\ 6\frac{1}{2} \\ 250\ 8\ 10\frac{1}{2} \\ 69\ 15\ 9\frac{1}{2} \\ 3\ 16\ 4\frac{1}{2} \\ 876\ 7\ 11\frac{1}{2} \\ 20\ 10\ 3 \end{array}$	$\begin{array}{r} 1\ 19\ 9 \\ 807\ 13\ 5\frac{1}{2} \\ 79\ 18\ 6\frac{1}{2} \\ 53\ 7\ 10\frac{1}{2} \\ 8\ 14\ 9 \\ 507\ 6\ 2\frac{1}{2} \\ 93\ 13\ 6 \end{array}$
X.	(1)	(2)	(3)	(4)
	$\begin{array}{r} 126\ 13\ 5\frac{1}{2} \\ 351\ 16\ 4\frac{1}{2} \\ 720\ 10\ 8\frac{1}{2} \\ 238\ 15\ 7\frac{1}{2} \\ 403\ 17\ 8\frac{1}{2} \\ 621\ 14\ 6\frac{1}{2} \\ 585\ 11\ 2\frac{1}{2} \end{array}$	$\begin{array}{r} 804\ 10\ 7\frac{1}{2} \\ 123\ 14\ 8\frac{1}{2} \\ 235\ 15\ 9\frac{1}{2} \\ 506\ 11\ 0\frac{1}{2} \\ 471\ 18\ 6\frac{1}{2} \\ 887\ 17\ 7\frac{1}{2} \\ 725\ 13\ 5\frac{1}{2} \end{array}$	$\begin{array}{r} 253\ 18\ 7\frac{1}{2} \\ 808\ 13\ 2\frac{1}{2} \\ 547\ 10\ 6\frac{1}{2} \\ 392\ 15\ 3\frac{1}{2} \\ 129\ 16\ 9\frac{1}{2} \\ 930\ 17\ 5\frac{1}{2} \\ 158\ 14\ 8\frac{1}{2} \end{array}$	$\begin{array}{r} 473\ 15\ 1\frac{1}{2} \\ 617\ 13\ 9\frac{1}{2} \\ 535\ 16\ 6\frac{1}{2} \\ 320\ 18\ 7\frac{1}{2} \\ 286\ 12\ 8\frac{1}{2} \\ 728\ 17\ 4\frac{1}{2} \\ 887\ 16\ 5\frac{1}{2} \end{array}$
Y.	(1)	(2)	(3)	(4)
	$\begin{array}{r} 553\ 18\ 7\frac{1}{2} \\ 567\ 16\ 8\frac{1}{2} \\ 724\ 13\ 9\frac{1}{2} \\ 478\ 17\ 10\frac{1}{2} \\ 389\ 16\ 6\frac{1}{2} \\ 825\ 13\ 8\frac{1}{2} \\ 776\ 19\ 11\frac{1}{2} \end{array}$	$\begin{array}{r} 286\ 14\ 10\frac{1}{2} \\ 877\ 18\ 11\frac{1}{2} \\ 495\ 15\ 9\frac{1}{2} \\ 760\ 16\ 8\frac{1}{2} \\ 149\ 13\ 7\frac{1}{2} \\ 638\ 12\ 10\frac{1}{2} \\ 486\ 10\ 5\frac{1}{2} \end{array}$	$\begin{array}{r} 729\ 15\ 6\frac{1}{2} \\ 380\ 19\ 11\frac{1}{2} \\ 458\ 10\ 10\frac{1}{2} \\ 673\ 13\ 3\frac{1}{2} \\ 528\ 12\ 8\frac{1}{2} \\ 191\ 14\ 7\frac{1}{2} \\ 889\ 18\ 9\frac{1}{2} \end{array}$	$\begin{array}{r} 473\ 10\ 11\frac{1}{2} \\ 839\ 19\ 10\frac{1}{2} \\ 646\ 15\ 6\frac{1}{2} \\ 777\ 18\ 8\frac{1}{2} \\ 583\ 18\ 9\frac{1}{2} \\ 250\ 14\ 10\frac{1}{2} \\ 897\ 17\ 7\frac{1}{2} \end{array}$

COMPOUND ADDITION.

Ex. 33.

- A. (1) Add together,—twenty-six pounds seventeen shillings and eight pence farthing; one hundred pounds and six pence; nine pounds thirteen shillings and ten pence halfpenny; fifty-seven pounds eight shillings and nine pence three farthings; and one pound four shillings and three pence farthing.
- (2) Add together,—two hundred and sixty pounds eleven shillings and a halfpenny; eight pounds ten shillings; thirteen pounds and eleven pence farthing; seventeen shillings and nine pence three farthings; three hundred and forty-nine pounds fifteen shillings and four pence halfpenny.
- (3) Find the sum of,—seven pounds nineteen shillings and five pence three farthings; eighteen shillings and ten pence three farthings; three hundred and three pounds and a penny; twenty-seven pounds fifteen shillings and eight pence farthing; two pounds six shillings and nine pence halfpenny.
- (4) What is the amount of,—fourteen shillings and two pence three farthings; eleven pence halfpenny; ninety-three pounds eighteen shillings and five pence; thirteen shillings and three pence three farthings; five hundred and twelve pounds and ten pence?
- B. (1) £29 13s. 10½d. + £309 15s. 2½d. + £837 11s. 6d. + £8 17s. 11½d. + 9½d. + £786 10s. 9½d. + £487 16s. 4½d.
- (2) Add together,—two pounds eight shillings and a halfpenny; five hundred pounds thirteen shillings and eight pence; seventy-eight pounds eleven shillings and three pence three farthings; ten shillings and five pence halfpenny; twelve pounds and eleven pence three farthings; and three hundred and forty-nine pounds sixteen shillings and nine pence halfpenny.
- (3) Add together,—one hundred and twenty-five pounds fourteen shillings and seven pence farthing; ten pence halfpenny; one pound and a penny; two hundred and fifty-nine pounds eighteen shillings and three pence farthing; and sixteen shillings and five pence halfpenny.
- (4) Find the sum of,—£720 15s. 4½d.; £59 10s. 0½d.; 17s. 8½d.; £316 14s. 9½d.; and £5 0s. 3d.
- C. (1) Add together the following sums of money :—£15 16s. 8½d., £397 18s. 9½d., £493 13s. 0½d., £8 10s. 6½d., £656 17s. 10½d., and £709 15s. 7½d.
- (2) Put down carefully £875 16s. 9½d. seven times, and then add.
- (3) £380 17s. 9½d. + £476 18s. 4½d. + £739 15s. 9½d. + £123 18s. 7½d. + £805 11s. 10½d. + £728 19s. 11½d.
- (4) Add together,—£214 19s. 1½d.; £709 13s. 8½d.; £156 17s. 7½d.; £830 14s. 0½d.; £612 10s. 11½d.; and £358 16s. 8½d.

D. (1)			(2)			(3)			(4)		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
2,846	13	0 $\frac{1}{2}$	4,250	16	7 $\frac{1}{2}$	1,729	12	1 $\frac{1}{2}$	8,891	17	8 $\frac{1}{2}$
53	10	6	607	9	10 $\frac{1}{2}$	808	13	4 $\frac{1}{2}$	49	10	10 $\frac{1}{2}$
411	14	8 $\frac{1}{2}$	5,028	13	4 $\frac{1}{2}$	6,735	18	3	806	16	6 $\frac{1}{2}$
6,020	7	1 $\frac{1}{2}$	36	15	8 $\frac{1}{2}$	2,859	19	11 $\frac{1}{2}$	27	9	7 $\frac{1}{2}$
9	15	3 $\frac{1}{2}$	6,754	12	5 $\frac{1}{2}$	6	7	5 $\frac{1}{2}$	4,238	13	5 $\frac{1}{2}$
643	12	9	8	8	8	300	14	8 $\frac{1}{2}$	5	11	11 $\frac{1}{2}$
1,234	15	7 $\frac{1}{2}$	2,012	10	3 $\frac{1}{2}$	3,583	16	9 $\frac{1}{2}$	683	7	9

E. (1)			(2)			(3)			(4)		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
5,008	11	10 $\frac{1}{2}$	3,539	18	7 $\frac{1}{2}$	7,268	15	10 $\frac{1}{2}$	6,543	12	11 $\frac{1}{2}$
620	18	6 $\frac{1}{2}$	2,860	17	6 $\frac{1}{2}$	647	13	4 $\frac{1}{2}$	3,456	17	8 $\frac{1}{2}$
309	18	0 $\frac{1}{2}$	719	10	5 $\frac{1}{2}$	3,050	7	11 $\frac{1}{2}$	9	6	4 $\frac{1}{2}$
1,234	6	5 $\frac{1}{2}$	43	4	4 $\frac{1}{2}$	139	5	8 $\frac{1}{2}$	200	3	10 $\frac{1}{2}$
8	12	3	1,007	13	10 $\frac{1}{2}$	23	19	7 $\frac{1}{2}$	87	14	9 $\frac{1}{2}$
715	9	4 $\frac{1}{2}$	5	8	3	4,399	3	9 $\frac{1}{2}$	1,709	18	5 $\frac{1}{2}$
49	15	7 $\frac{1}{2}$	646	9	9 $\frac{1}{2}$	16	10	4	44	5	8 $\frac{1}{2}$

F. (1)			(2)			(3)			(4)		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
3,254	17	5 $\frac{1}{2}$	5,387	10	6 $\frac{1}{2}$	1,704	18	0 $\frac{1}{2}$	8,253	15	7 $\frac{1}{2}$
380	14	6 $\frac{1}{2}$	40	18	11 $\frac{1}{2}$	69	7	11 $\frac{1}{2}$	786	13	8 $\frac{1}{2}$
5,807	9	10 $\frac{1}{2}$	6,000	11	10 $\frac{1}{2}$	933	10	9 $\frac{1}{2}$	68	7	10 $\frac{1}{2}$
65	13	7 $\frac{1}{2}$	9	4	9 $\frac{1}{2}$	77	8	4 $\frac{1}{2}$	3,095	14	9 $\frac{1}{2}$
909	18	8 $\frac{1}{2}$	253	17	5 $\frac{1}{2}$	8,856	11	5 $\frac{1}{2}$	687	19	11 $\frac{1}{2}$
4,726	7	6 $\frac{1}{2}$	78	16	6 $\frac{1}{2}$	5	9	10 $\frac{1}{2}$	4,800	10	10 $\frac{1}{2}$
439	10	10 $\frac{1}{2}$	7,654	13	11 $\frac{1}{2}$	638	15	3 $\frac{1}{2}$	354	16	5 $\frac{1}{2}$

G. (1)			(2)			(3)			(4)		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
2,389	13	10 $\frac{1}{2}$	8,078	13	9 $\frac{1}{2}$	1,234	19	11 $\frac{1}{2}$	6,389	14	8 $\frac{1}{2}$
5,063	12	4 $\frac{1}{2}$	9,503	16	7 $\frac{1}{2}$	6,597	18	9 $\frac{1}{2}$	7,207	10	11 $\frac{1}{2}$
9,708	18	8 $\frac{1}{2}$	7,837	10	0 $\frac{1}{2}$	3,072	13	8 $\frac{1}{2}$	5,796	19	4 $\frac{1}{2}$
7,865	19	7 $\frac{1}{2}$	5,620	17	3 $\frac{1}{2}$	4,766	14	7 $\frac{1}{2}$	9,387	18	10 $\frac{1}{2}$
1,200	17	10	4,358	18	4 $\frac{1}{2}$	7,988	10	6 $\frac{1}{2}$	6,859	17	6 $\frac{1}{2}$
8,678	13	11 $\frac{1}{2}$	6,597	9	9 $\frac{1}{2}$	9 420	17	9 $\frac{1}{2}$	8,948	16	5 $\frac{1}{2}$
5,439	16	9 $\frac{1}{2}$	8,756	13	8 $\frac{1}{2}$	8,653	16	10 $\frac{1}{2}$	5,739	19	9 $\frac{1}{2}$
9,952	10	11 $\frac{1}{2}$	2,345	17	6 $\frac{1}{2}$	5,726	12	5 $\frac{1}{2}$	9,810	10	10 $\frac{1}{2}$

H. (1) Add together,—two thousand eight hundred and seventeen pounds sixteen shillings and nine pence halfpenny; five hundred and ninety-four pounds fifteen shillings and seven pence three farthings; sixty-eight pounds eighteen shillings and nine pence three farthings; seven thousand and seventy-nine pounds twelve shillings and four pence farthing; eight hundred and ninety-three pounds sixteen shillings and eight pence halfpenny; four hundred and seventy-seven pounds thirteen shillings and five pence farthing; and eight pounds eighteen shillings and two pence halfpenny.

(2) Find the sum of six thousand eight hundred and ninety-five pounds seventeen shillings and two pence halfpenny; eight thousand two hundred and seventy-four pounds twelve shillings and eight pence; three hundred and sixty-five pounds eighteen shillings and ten pence halfpenny; and two thousand seven hundred and thirty-six pounds and eight pence halfpenny.

(3) Add up,—twenty thousand one hundred and eighty-six pounds fifteen shillings and nine pence; three thousand and ninety-five pounds fourteen shillings and ten pence three farthings; twenty-one thousand three hundred and fifty-six pounds eighteen shillings and nine pence three farthings; five thousand six hundred and eighty-nine pounds fourteen shillings and six pence; and three thousand six hundred and ninety-five pounds thirteen shillings and five pence halfpenny.

L. (1) Add together,—eight hundred and seventy-five pounds seventeen shillings and five pence halfpenny; two thousand and ninety-six pounds eighteen shillings and tenpence; eighty-seven pounds and three pence three farthings; nine shillings and seven pence halfpenny; twenty thousand seven hundred and six pounds; seven thousand eight hundred and forty pounds seventeen shillings and three pence three farthings; and ninety-nine pounds thirteen shillings and elevenpence.

(2) Add together,—£37,816 10s. 7½d., £8,395 15s. 9¾d., £789 19s. 1½d., £4,001 10s. 8½d., £976 15s. 4¾d., £88 18s. 2½d., £7,864 12s. 5½d., and £9,876 14s. 3½d.

(3) Add together,—£3,056 18s. 11½d., £401,090 18s. 7¾d., £70,709 12s. 10½d., £3,030,008 15s. 2½d., £896,008 17s. 9d., £1,009 16s. 4¾d., and £66,101,863 13s. 4¾d.

J.	(1)			(2)			(3)		
	£	s.	d.	£	s.	d.	£	s.	d.
	32,674	10	5½	53,406	12	9½	12,845	16	7½
	845	8	7½	6,271	5	8½	56,789	18	6½
	5,200	12	10	28,054	10	6½	50	7	10½
	48,153	13	6½	708	18	7½	208	14	8½
	69	17	8½	82,427	6	9½	20,537	5	11½
	63,501	4	6½	7,110	13	8½	46	18	5½
	6,282	11	4½	66,283	14	10½	9	19	9½
	728	9	11½	69	9	8½	68,295	13	7½
	52,148	15	7½	72,596	17	11½	7,508	18	10½

K.	(1)			(2)			(3)		
	£	s.	d.	£	s.	d.	£	s.	d.
	42,370	15	8½	4,729	13	10½	98,727	16	5½
	57,286	17	10½	98	15	11½	6,984	10	8½
	3,892	9	6½	19,238	14	4½	72,075	12	10½
	89,230	10	11½	305	19	6½	897	17	5½
	683	15	4½	1,947	16	7½	7,536	18	9½
	7,207	17	0½	88,329	17	5½	43,689	19	10½
	66,528	14	9½	6,928	10	11½	57,290	13	8½
	38,000	11	10½	83	18	9½	8	15	11½
	9,825	15	8½	37,202	14	2½	483	14	6½
	93,076	18	6½	5,678	19	10½	8,726	17	7½

L.	(1)			(2)		
	£	s.	d.	£	s.	d.
	2,675,086	15	8½	4,738,469	18	7½
	58,293	17	9½	6,897,958	19	8½
	700,309	18	10½	2,789,683	18	10½
	3,926,176	19	10½	9,208,706	17	9½
	5,238	16	7½	8,392,675	15	6½
	9,338,764	18	11½	4,567,890	19	7½
	46,385	15	5½	8,698,239	18	11½
	8,279,688	19	9½	7,470,688	17	10½
	5,687,940	10	10½	4,289,739	19	11½
	4,216,376	17	6½	5,672,868	13	9½
	809,268	19	9½	9,389,750	18	8½
	7,892,679	16	11½	1,234,567	19	11½

EXAMINATIONS IN COMPOUND ADDITION.

Ex. 34.

- A. (1) Add together,—thirty-eight thousand six hundred and twenty-nine pounds eighteen shillings and three pence half-penny; one hundred and five pounds twelve shillings and eight pence; twelve thousand and eighty-seven pounds sixteen shillings and three pence three farthings; and six thousand five hundred and eight pounds eighteen shillings and eleven pence.
- (2) A gentleman left to each of his six children £210 18s. 6d.; find the sum of money to be distributed among them.
- (3) A servant paid 7s. 6d. for sugar; 2s. 6d. for tea; 1s. 8d. for butter; and three halfpence for matches. What was the amount she spent?
- (4) In a year I saved fifteen shillings and a halfpenny. My sister's savings were half-a-crown *more* than mine; find how much we both saved together.
- B. (1) Find the sum of,—£29 0s. 10d.; £16 18s. 4½d.; 19s. 9½d.; £508 13s. 11d.; £48,317 4s. 8½d.; and £77,002 0s. 7½d.
- (2) A merchant paid £15 3s. 7½d. to a grocer; £29 18s. 0½d. to a draper; £18 to a butcher; he had then £39 19s. 11d. left. What sum had he at first?
- (3) A cricket bat which cost half-a-guinea, was sold again at a profit of half-a-crown. Find the selling price.
- (4) A man gave sixteen pounds for a horse, and then spent sixteen shillings a week on it for six weeks. How much had it cost him altogether?
- C. (1) The collections on a Sunday at eight places of worship were:—£79 18s. 4½d.; £35 4s. 7½d.; £27 6s. 5d.; £68 17s. 7½d.; £56 9s. 6½d.; £97 13s. 3½d.; £84 15s. 9½d.; and £65 18s. 7½d. What was the total amount collected?
- (2) If I took £3 17s. 9½d. to pay a bill, but found my money too little by 13s. 0½d., how much was the bill?
- (3) Put down carefully,—£58,079 16s. 0½d. *seven* times, and then add. Write the answer in words.
- (4) After paying 18s. 4d. for a railway ticket and half-a-crown for cab hire, I had £1 7s. 6d. left. What sum had I at first?
- D. (1) A farmer bought a cart for £15. His horse cost him just as much again as the cart. Find the total cost of both.
- (2) A man paid £17 15s. 0½d. of his debt, and there was £3 11s. 2d. left. How much was it at first?
- (3) Find the sum of nine times £27,896 17s. 11½d. Write the answer in words.
- (4) A person had his pocket picked of 8s. 4d. Had the thief taken 6s. 8d. more, he would have taken half the person's money. How much money had he?

- E.** (1) Add together one of each of the coins of the realm, gold, silver, and copper.
- (2) If a horse cost fifty-two pounds ten shillings, and the harness twenty half-crowns, what would the horse and harness together cost?
- (3) Find the sum of seventeen pounds four shillings and a halfpenny; eighty-four thousand one hundred and fifty-six pounds eighteen shillings and six pence halfpenny; nine thousand one hundred and four pounds eighteen shillings and four pence halfpenny; six hundred and fifty pounds sixteen shillings and four pence farthing; and four thousand six hundred and seventeen pounds eighteen shillings and fourpence farthing.
- (4) Add together,—twenty-five half-crowns; one thousand and forty-three half-sovereigns; fifty-two pounds twelve shillings and sixpence; eighty-seven fourpences; ten thousand two hundred and six pence; eight thousand and eighty shillings; and ten thousand farthings.
- F.** (1) £101 10s. 6½d. + £37,869 15s. 10½d. + £600,198 0s. 1d. + 10½d. + £50 + £7,865 19s. 11½d. + £83 18s. 8½d. + £7 17s. 10½d.
- (2) A cow was bought for seventeen guineas. If its calf were worth just as many crowns, what was the value of both of them?
- (3) Add together,—£18 16s. 0½d.; £3,416 0s. 8½d.; £91,708 14s. 5½d.; £684 16s. 4½d.; and £76,081 19s. 11½d.
- (4) A draper found in his till on Saturday evening,—a five-pound-note, 30 sovereigns, 7 half-sovereigns, 2 crowns, 15 half-crowns, 4 florins, 20 shillings, 109 sixpences, and six shillings and a halfpenny in copper. Give the amount in £ s. d.
- G.** (1) Add together,—£9,694 17s. 9½d.; £782 16s. 4½d.; £9 0s. 9½d.; £867 17s. 8½d.; £13,006 18s. 2½d.; £70 16s. 4½d.; £9,007 19s. 8½d.; £12 17s. 6½d.; and £76,764 19s. 8½d.
- (2) A boy sold a knife for 1s. 11½d., which was a loss of 6½d. Find the cost price of the knife.
- (3) Find the sum of 17 guineas; £9; 100 florins; 50 groats; and ten thousand halfpennies; and express it in *twopences*.
- (4) A shopkeeper took £2 0s. 4½d. on Monday; £2 10s. on Tuesday; £1 17s. 9d. on Wednesday; £3 0s. 4d. on Thursday; £4 15s. 7½d. on Friday; and on Saturday just as much as he had received on all the other days put together. How much did he receive in the week?

Ex. 35.

A. (1) (2) (3) (4) (5) (6)						B. (1) (2) (3) (4) (5) (6)									
d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.				
8	6½	4¾	9½	7½	2½	8¾	10½	11¾	9¾	5½	7½				
3	2½	3¾	6½	5	1½	6¾	8	10	3¾	2	0½				
C. (1) (2) (3) (4) (5) (6)															
s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.				
7	2½	5	4½	9	7½	11	6	14	8	17	1				
4	0½	3	2¾	8	6¾	6	2½	10	7½	18	0¾				
D. (1) (2) (3) (4) (5) (6)															
s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.				
13	2½	18	1	16	3½	15	4	19	6½	10	10				
6	4	10	9½	4	9¾	14	8½	13	9¾	7	9¾				
E. (1) (2) (3) (4) (5) (6)															
s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.				
18	7½	19	9½	13	5½	17	11½	18	8	15	10½				
13	10½	16	11	9	5¾	14	10¾	15	11½	14	11½				
F. (1) (2) (3) (4) (5) (6)															
s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.				
15	9½	17	0½	10	0½	18	0¾	19	0½	16	11½				
9	8¾	8	0½	9	9	8	11¾	12	11½	8	0¾				
G. (1) (2) (3) (4)															
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.				
20	10	9½	37	4	8	65	6	7½	80	10	3½				
9	6	11½	14	17	0¾	16	18	9½	76	12	9¾				
H. (1) (2) (3) (4)															
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.				
53	14	6	89	19	0½	75	13	6½	54	18	9½				
26	13	6½	64	18	11½	18	16	9¾	86	19	8¾				
I. (1) (2) (3) (4)															
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.				
97	14	8½	53	16	9	72	19	0	90	17	0½				
39	14	9½	37	18	10½	66	19	11½	39	19	11½				
Find the difference between—															
J.	£	s.	d.	£	s.	d.	K.	£	s.	d.	£	s.	d.		
(1)	90	13	9	and	59	16	4¾	(1)	39	16	11½	and	18	17	10½
(2)	87	0	6½	and	19	19	6¾	(2)	77	10	0½	and	39	19	11½
(3)	59	17	0½	and	29	16	0½	(3)	48	18	6½	and	27	18	7½
(4)	60	15	7½	and	40	14	9	(4)	53	13	10½	and	49	17	10½

- L.** (1) From twenty pounds, take sixteen pounds and four pence halfpenny.
(2) From fifty-six pounds and seven pence farthing, take nine pounds nineteen shillings and three farthings.
(3) Take eighteen pounds seven shillings and a penny, from twenty-nine pounds five shillings.
(4) From fifty-three pounds and a farthing, take twenty-nine pounds nineteen shillings.
- M.** (1) Subtract twenty-six pounds fourteen shillings and seven pence, from forty-seven pounds fourteen shillings and six pence farthing.
(2) Take eleven pence three farthings, from thirty pounds.
(3) From fifty-eight pounds ten shillings, take forty-six pounds nineteen shillings and a halfpenny.
(4) Take twenty-seven pounds fourteen shillings and ten pence farthing, from thirty-seven pounds fifteen shillings and four pence farthing.
- N.** (1) From thirteen pounds and three pence three farthings, take ten pounds and fourpence.
(2) Take nineteen shillings and a farthing, from ten pounds nineteen shillings.
(3) Subtract fifty pounds and five pence halfpenny, from sixty pounds.
(4) From forty-four pounds one shilling and eight pence halfpenny, take seventeen pounds sixteen shillings and nine pence farthing.
- O.** (1) Subtract fifty pounds, from sixty-seven pounds seventeen shillings and five pence halfpenny.
(2) From thirty-nine pounds fourteen shillings and six pence halfpenny, take eighteen pounds seventeen shillings and ten pence halfpenny.
(3) From eighty-one pounds and three farthings, take forty pounds and a penny.
(4) Take sixteen pounds nineteen shillings and nine pence halfpenny, from seventy-three pounds eighteen shillings and seven pence farthing.
- P.** (1) From eighty-six pounds fourteen shillings and five pence farthing, take fifty-nine pounds thirteen shillings and seven pence.
(2) Subtract ten pounds and eleven pence farthing, from twenty-one pounds.
(3) From ninety pounds and nine pence, take forty-nine pounds nineteen shillings and ten pence.
(4) Take fourteen pounds and a penny three farthings, from sixteen pounds nine shillings and a penny.

Ex. 36.

EX. 30.															
A.				(2)				(3)				(4)			
£	s.	d.		£	s.	d.		£	s.	d.		£	s.	d.	
176	0	0 $\frac{1}{2}$		880	15	6 $\frac{1}{2}$		609	17	3		729	19	11 $\frac{1}{2}$	
160	19	0 $\frac{3}{4}$		39	18	9		400	10	11 $\frac{1}{2}$		699	18	11 $\frac{1}{2}$	
<hr/>				<hr/>				<hr/>				<hr/>			
B.				(2)				(3)				(4)			
£	s.	d.		£	s.	d.		£	s.	d.		£	s.	d.	
209	16	8		690	0	0		839	13	3 $\frac{1}{2}$		901	8	7	
90	17	11 $\frac{1}{2}$		89	0	0 $\frac{1}{2}$		29	19	8 $\frac{1}{2}$		19	11 $\frac{1}{2}$		
<hr/>				<hr/>				<hr/>				<hr/>			
C.				(2)				(3)				(4)			
£	s.	d.		£	s.	d.		£	s.	d.		£	s.	d.	
8,920	4	7 $\frac{1}{2}$		1,700	0	0		7,058	13	11		1,530	2	7 $\frac{1}{2}$	
4,910	18	6 $\frac{3}{4}$		90	19	0 $\frac{1}{2}$		909	14	6 $\frac{3}{4}$		969	18	11 $\frac{1}{2}$	
<hr/>				<hr/>				<hr/>				<hr/>			
D. (1) From ten thousand pounds and a farthing, take £811 0s. 1d.															
(2) Take six thousand and two pounds one shilling from £17,003 0s. 0 $\frac{3}{4}$ d.															
(3) What is the difference between £12,096 17s. 4 $\frac{1}{2}$ d., and £9,099 18s. 10 $\frac{3}{4}$ d.?															
(4) Subtract £190 19s. 0 $\frac{1}{2}$ d., from twenty thousand pounds.															
E. £ s. d. £ s. d. F. £ s. d. £ s. d.															
(1) 20,865	17	3	-	790	17	9 $\frac{1}{2}$		(1) 10,279	19	4 $\frac{1}{2}$	-	7,096	13	8 $\frac{3}{4}$	
(2) 69,005	0	0	-	18,996	19	11 $\frac{3}{4}$		(2) 98,725	15	9 $\frac{3}{4}$	-	49,678	18	8 $\frac{1}{2}$	
(3) 50,706	13	8 $\frac{1}{2}$	-	29,800	0	8		(3) 20,010	0	11	-	90	1	1	
(4) 10,018	14	0 $\frac{1}{2}$	-	9,027	18	2		(4) 3,287	16	5 $\frac{1}{2}$	-	2,979	16	6 $\frac{1}{2}$	
(5) 9,683	1	11 $\frac{1}{2}$	-	2,979	16	4 $\frac{1}{2}$		(5) 70,350	18	10 $\frac{1}{2}$	-	39,628	17	11 $\frac{1}{2}$	
(6) 99,700	0	6	-	61,909	19	0 $\frac{1}{2}$		(6) 38,600	11	3 $\frac{1}{2}$	-	19,529	13	9 $\frac{1}{2}$	
G. (1) Subtract twenty-five pounds four shillings and a penny farthing, from £1,000.															
(2) Find the difference between £86,973 11s. 10 $\frac{1}{2}$ d., and £546,800 13s. 11 $\frac{3}{4}$ d.															
(3) From £2,759 14s. 11 $\frac{1}{2}$ d., take £906 15s. 11 $\frac{1}{2}$ d.															
(4) Take £6,079 17s. 11 $\frac{1}{2}$ d., from £20,186 19s. 0 $\frac{1}{2}$ d.															
(5) Subtract £19,845 13s. 7 $\frac{1}{2}$ d., from £50,407 2s. 4d.															
(6) How much more is £1,000 than £84 9s. 10d.?															
H. £ s. d. £ s. d. I. £ s. d. £ s. d.															
(1) 12,305	13	0 $\frac{1}{2}$	-	1,293	19	0 $\frac{3}{4}$		(1) 30,258	16	4 $\frac{1}{2}$	-	97	19	1	
(2) 65,070	9	3 $\frac{1}{2}$	-	59,906	15	0 $\frac{1}{2}$		(2) 29,300	0	1	-	409	19	11 $\frac{1}{2}$	
(3) 28,214	16	1	-	12,345	16	7 $\frac{1}{2}$		(3) 99,298	12	3 $\frac{1}{4}$	-	28,189	7	8 $\frac{1}{4}$	
(4) 90,123	11	11 $\frac{1}{2}$	-	89,690	10	10 $\frac{1}{2}$		(4) 14,701	13	8	-	809	18	7 $\frac{1}{2}$	
(5) 23,456	17	8 $\frac{1}{2}$	-	12,549	9	11		(5) 69,290	10	10	-	28,189	19	10 $\frac{1}{2}$	
(6) 40,207	10	0	-	13,098	9	1 $\frac{1}{2}$		(6) 12,987	16	5 $\frac{1}{2}$	-	1,992	15	11 $\frac{1}{2}$	

- J. (1) Take nine hundred and forty-six pounds thirteen shillings and ten pence halfpenny, from one thousand six hundred and eighty-seven pounds one shilling and seven pence three farthings, and write the answer in words.
- (2) From six thousand three hundred and forty-one pounds four shillings and three pence, take nine hundred and eighty pounds five shillings and four pence farthing.
- (3) Subtract nine thousand nine hundred and ninety pounds eighteen shillings and nine pence three farthings, from fifty thousand seven hundred and twenty-nine pounds eighteen shillings and nine pence three farthings.
- (4) From twenty-three thousand five hundred and two pounds seventeen shillings and four pence, take nine thousand eight hundred and ninety-five pounds nineteen shillings and ten pence halfpenny.
- K. (1) From nineteen thousand six hundred and eight pounds seven shillings and three pence, take eight thousand nine hundred and nineteen pounds seventeen shillings and five pence farthing.
- (2) What is the difference between eight thousand and ninety-one pounds seventeen shillings and eleven pence halfpenny, and twenty-seven thousand and one pounds twelve shillings and a farthing? Write the answer in words.
- (3) Take two thousand nine hundred and two pounds nineteen shillings and nine pence, from sixty-two thousand and one pounds and seven pence farthing.
- (4) How much is nine thousand and eighty-five pounds thirteen shillings and eleven pence farthing, less than fifty thousand and forty-six pounds thirteen shillings and a farthing?
- L. (1) Subtract one thousand eight hundred and ninety-five pounds eighteen shillings and eleven pence three farthings, from fifty thousand and forty-one pounds eighteen shillings and a halfpenny.
- (2) From seven hundred and two thousand and four pounds sixteen shillings and a halfpenny, take ninety-four thousand eight hundred and seven pounds eighteen shillings and nine pence three farthings. Write the answer in words.
- (3) What is the difference between seven thousand and sixty-one pounds thirteen shillings and four pence halfpenny, and twenty-one thousand six hundred and four pounds seven shillings and a penny farthing?
- (4) How much must be added to six pounds and eight pence, to make two thousand pounds eighteen shillings and nine pence halfpenny?

EXAMINATIONS IN COMPOUND SUBTRACTION.

Ex. 37.

- A. (1) A man who owed £100, could only pay £89 17s. 6d.; what did he still owe?
 (2) A bat and ball together cost a guinea. The ball cost seven shillings and six pence. Find the price of the bat.
 (8) How much money must be added to £106 19s. 11d., to make thirty thousand two hundred and seven pounds ten shillings and nine pence farthing? Write the answer in words.
 (4) If I pay a bill of two pounds and a penny with a five-pound note, what change ought I to receive?
- B. (1) How much greater than seventeen thousand and eleven pounds and a halfpenny, is twenty thousand pounds and a penny? Write the answer in words.
 (2) A cow and a calf were worth £16 7s. 10½d., the calf alone was worth £2 6s. 7½d. What was the value of the cow?
 (3) A gentleman put £1,000 in the bank. If he pays a cheque value £70 15s. 8½d., what sum of money will he then have in the bank?
 (4) In working a sum a boy gave as his answer £6,805 0s. 11d. If this were too much by £799 19s. 0½d., what was the correct answer?
- C. (1) Find the difference between two hundred thousand and fifty pounds and six pence, and forty-nine pounds nineteen shillings and nine pence, and write it in words.
 (2) A farmer bought a horse for forty-seven pounds eighteen shillings and sixpence. He afterwards sold it for fifty pounds nineteen shillings. What was his gain?
 (3) A framed picture was sold for £23 10s. 6d. The frame cost 17s. 6d. What was the price of the picture itself?
 (4) A man's balance at the bank was at the beginning of this month £457 12s. 5d., out of which the banker has since paid to his order sums amounting to £298 19s. 8½d. What is his balance now?
- D. (1) By how much does £70,101, exceed £90 15s. 0½d.? Write the answer in words.
 (2) If £39 18s. 9½d. be deducted from £280, what is the remainder?
 (3) A lady bought two dresses, one of which cost £9 13s. 6d. and the other £12 0s. 3d. How much cheaper was one than the other?
 (4) A father left his daughter £6,000, and his son £2,090 10s. less than his daughter. What was the amount of the son's share?

EXAMINATIONS IN COMPOUND ADDITION AND SUBTRACTION.

Ex. 38.

- A. (1) A man paid one pound eighteen shillings and six pence, three pounds fifteen shillings, and then two pounds ten shillings and nine pence farthing. What had he left out of a ten-pound note?
- (2) I have in the bank fifty pounds. I spent three guineas, nine half-sovereigns, and nine half-crowns. How much had I left?
- (3) If I go to a shop for a quantity of tea which costs 4s. 7d., butter 1s. 7d., cheese 1s. 7½d., how much change shall I have out of a sovereign?
- (4) A man bought a hundred eggs at one shilling and three halfpence per score, and sold them at a penny a-piece. How much did he gain?
- B. (1) A boy went for 3 lbs. of sugar at 4½d. per lb., and a quarter of a pound of tea at 3s. 8d. per lb. How much had he left out of two shillings and sixpence?
- (2) A man earns five guineas in three weeks. The first week he earned twenty-eight shillings and sixpence, and the second week one pound fifteen shillings and sixpence. What did he earn the third week?
- (3) If a man put in a bank fifty pounds, and afterwards thirteen pounds eight shillings, how much will he want to make up a hundred pounds?
- (4) My father having £1,000 3s. 4½d., owes his butcher £17 8s. 6½d., his baker £25 14s. 6½d., and his tailor £12 19s. 11½d.: find what he will have in hand after paying these bills.
- C. (1) Add together £7 19s. 6½d., £11 0s. 10d., £28 3s. 4½d., and £16 8s. 0½d., and subtract the sum from £100.
- (2) A family of father, mother, and two sons earn together three pounds ten shillings in a week. The mother earns five shillings and four pence, and each of the sons sixteen shillings and eight pence. What does the father earn in the week?
- (3) A girl went to a post-office with half-a-sovereign. She bought two dozen half-penny stamps, four penny stamps, a packet of post-cards at seven pence, and a packet of envelopes at three pence. What change had she?
- (4) A tax collector took at one house £1 0s. 1½d., at another £21 1s. 6d., at a third £6 8s. 0½d., at a fourth £1 17s. 5½d.; on returning home his pocket burst, and all the money he had collected was scattered on the ground: he picked up £30 7s. 0½d. How much did he lose?

64 EXAMS. IN COMPOUND ADDITION AND SUBTRACTION.

- D. (1) A gentleman had half-a-crown in his pocket. He changed it into half-pennies, and gave two to each of fifteen boys. How many threepences had he left?
- (2) A man earned thirty shillings a week. On Monday he earned two shillings and six pence, on Tuesday a shilling, on Wednesday three shillings and six pence, on Thursday one shilling and four pence, and on Friday four shillings and three pence. How much did he earn on Saturday?
- (3) A servant takes seven half-crowns, and buys a quantity of tea for five shillings and six pence, candles for two shillings and two pence, sugar for three shillings and eleven pence, and coffee for one shilling and five pence half-penny. How much money ought she to return to her mistress?
- (4) A horse and harness together cost eighty-four pounds six shillings and eight pence. The harness cost twenty-five pounds thirteen shillings and ten pence. How much did the horse cost more than the harness?
- E. (1) What change ought I to have out of half-a-sovereign when I bought a dozen oranges at two for three-halfpence, and three and a half pounds of nuts at five pence per pound?
- (2) A hospital is to be built for £10,000. The promoters have received the following sums, viz.: £4,318 7s. 10½d., £295 9s. 9d., £2,867 5s. 2½d., and £47 18s. 8½d. How much more have they to raise?
- (3) If I am worth 12 guineas, and my brother has 15 half guineas more than me, how much has my sister, who has just as much as both of us together?
- (4) A sideboard, table, and carpet cost £63 5s. 6d. The sideboard and table cost £54 14s. 9d., and the table and carpet cost £26 0s. 4d. Find what each cost.
- F. (1) Nine rupees, six crown pieces, and eleven three-penny pieces amount to £2 13s. What is the value of a rupee?
- (2) Add together,—four thousand and five pounds; five hundred pounds five shillings and three pence farthing; seven million thirty thousand pounds and ten pence; and fifteen pounds four shillings and three halfpence. Write the answer in words.
- (3) If I owe £5 3s. 9d., £10 10s., and £17 18s. 6d., and I have in the bank £100, and the following bills are due to me, viz., £20 1s. 2d., 19s. 10d., and £12 11s. 3d., how much shall I have when my accounts are all settled?
- (4) A, B, and C together have £50. A and B have £30; A and C have £33; and B and C have £37. What is each one's share?

COMPOUND MULTIPLICATION.

Ex. 39.

A. (1)	(2)	(3)	(4)	(b)
$\begin{array}{r} s. \ d. \\ 2 \ 1\frac{1}{2} \\ 2 \end{array}$	$\begin{array}{r} s. \ d. \\ 2 \ 3\frac{1}{2} \\ 2 \end{array}$	$\begin{array}{r} s. \ d. \\ 4 \ 2\frac{1}{2} \\ 2 \end{array}$	$\begin{array}{r} s. \ d. \\ 8 \ 5\frac{1}{2} \\ 2 \end{array}$	$\begin{array}{r} s. \ d. \\ 4 \ 4\frac{3}{4} \\ 2 \end{array}$
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
B. (1)	(2)	(3)	(4)	(5)
$\begin{array}{r} s. \ d. \\ 3 \ 2\frac{1}{2} \\ 3 \end{array}$	$\begin{array}{r} s. \ d. \\ 4 \ 3\frac{1}{2} \\ 3 \end{array}$	$\begin{array}{r} s. \ d. \\ 5 \ 2\frac{3}{4} \\ 3 \end{array}$	$\begin{array}{r} s. \ d. \\ 2 \ 7\frac{1}{2} \\ 3 \end{array}$	$\begin{array}{r} s. \ d. \\ 6 \ 5\frac{1}{2} \\ 3 \end{array}$
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
C. (1)	(2)	(3)	(4)	(5)
$\begin{array}{r} s. \ d. \\ 2 \ 0\frac{1}{4} \\ 4 \end{array}$	$\begin{array}{r} s. \ d. \\ 5 \ 1\frac{3}{4} \\ 4 \end{array}$	$\begin{array}{r} s. \ d. \\ 4 \ 6\frac{1}{4} \\ 4 \end{array}$	$\begin{array}{r} s. \ d. \\ 7 \ 2\frac{3}{4} \\ 4 \end{array}$	$\begin{array}{r} s. \ d. \\ 5 \ 8\frac{1}{4} \\ 4 \end{array}$
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
D. (1)	(2)	(3)	(4)	(5)
$\begin{array}{r} s. \ d. \\ 4 \ 3\frac{1}{2} \\ 5 \end{array}$	$\begin{array}{r} s. \ d. \\ 8 \ 4\frac{3}{4} \\ 5 \end{array}$	$\begin{array}{r} s. \ d. \\ 5 \ 7\frac{1}{4} \\ 5 \end{array}$	$\begin{array}{r} s. \ d. \\ 7 \ 8\frac{3}{4} \\ 5 \end{array}$	$\begin{array}{r} s. \ d. \\ 6 \ 4\frac{1}{2} \\ 5 \end{array}$
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
E. (1)	(2)	(3)	(4)	(5)
$\begin{array}{r} s. \ d. \\ 3 \ 5\frac{1}{2} \\ 6 \end{array}$	$\begin{array}{r} s. \ d. \\ 4 \ 0\frac{3}{4} \\ 6 \end{array}$	$\begin{array}{r} s. \ d. \\ 8 \ 7\frac{3}{4} \\ 6 \end{array}$	$\begin{array}{r} s. \ d. \\ 5 \ 9\frac{1}{2} \\ 6 \end{array}$	$\begin{array}{r} s. \ d. \\ 7 \ 7\frac{1}{2} \\ 6 \end{array}$
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
F. (1)	(2)	(3)	(4)	(5)
$\begin{array}{r} s. \ d. \\ 4 \ 7\frac{1}{2} \\ 7 \end{array}$	$\begin{array}{r} s. \ d. \\ 8 \ 1\frac{1}{2} \\ 7 \end{array}$	$\begin{array}{r} s. \ d. \\ 7 \ 8\frac{3}{4} \\ 7 \end{array}$	$\begin{array}{r} s. \ d. \\ 5 \ 9\frac{3}{4} \\ 7 \end{array}$	$\begin{array}{r} s. \ d. \\ 8 \ 8\frac{1}{4} \\ 7 \end{array}$
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

G. Multiply *each* of the following sums of money, by 2, 3, 4, 5, 6, and 7, separately.

(a) $\begin{array}{r} s. \ d. \\ 2 \ 4\frac{3}{4} \end{array}$	(i) $\begin{array}{r} s. \ d. \\ 6 \ 6\frac{1}{4} \end{array}$	(g) $\begin{array}{r} s. \ d. \\ 7 \ 2\frac{3}{4} \end{array}$
(b) $\begin{array}{r} s. \ d. \\ 3 \ 5 \end{array}$	(j) $\begin{array}{r} s. \ d. \\ 5 \ 8\frac{1}{4} \end{array}$	(r) $\begin{array}{r} s. \ d. \\ 3 \ 8\frac{1}{4} \end{array}$
(c) $\begin{array}{r} s. \ d. \\ 3 \ 8\frac{1}{2} \end{array}$	(k) $\begin{array}{r} s. \ d. \\ 7 \ 7\frac{1}{4} \end{array}$	(s) $\begin{array}{r} s. \ d. \\ 6 \ 9\frac{3}{4} \end{array}$
(d) $\begin{array}{r} s. \ d. \\ 5 \ 2\frac{1}{4} \end{array}$	(l) $\begin{array}{r} s. \ d. \\ 8 \ 9\frac{1}{4} \end{array}$	(t) $\begin{array}{r} s. \ d. \\ 5 \ 4\frac{1}{4} \end{array}$
(e) $\begin{array}{r} s. \ d. \\ 6 \ 7\frac{1}{4} \end{array}$	(m) $\begin{array}{r} s. \ d. \\ 3 \ 10\frac{1}{4} \end{array}$	(u) $\begin{array}{r} s. \ d. \\ 8 \ 10\frac{3}{4} \end{array}$
(f) $\begin{array}{r} s. \ d. \\ 7 \ 0\frac{3}{4} \end{array}$	(n) $\begin{array}{r} s. \ d. \\ 6 \ 4\frac{3}{4} \end{array}$	(v) $\begin{array}{r} s. \ d. \\ 7 \ 9\frac{1}{4} \end{array}$
(g) $\begin{array}{r} s. \ d. \\ 8 \ 6\frac{1}{4} \end{array}$	(o) $\begin{array}{r} s. \ d. \\ 2 \ 11 \end{array}$	(w) $\begin{array}{r} s. \ d. \\ 9 \ 8\frac{1}{4} \end{array}$
(h) $\begin{array}{r} s. \ d. \\ 5 \ 9\frac{1}{2} \end{array}$	(p) $\begin{array}{r} s. \ d. \\ 5 \end{array}$	(x) $\begin{array}{r} s. \ d. \\ 9 \ 9\frac{3}{4} \end{array}$

H. (1)			(2)			(3)			(4)		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
2	6	4½	8	5	8½	4	0	7½	5	4	8½
		7			7			7			7

L	(1)	(2)	(3)	(4)							
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
3	7	6½	5	2	9½	7	6	8½	4	9	10½
		8			8			8			8

J.	(1)	(2)	(3)	(4)							
£	s.	d.	£	s.	d.	£	s.	d.			
2	18	4½	2	15	0½	3	10	6½	8	11	4½
		9			9			9			9

K.	(1)	(2)	(3)	(4)
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
	5 9 10½	6 10 8½	8 12 9½	7 13 8½
	10	10	10	10

L.	(1)	(2)	(3)	(4)
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
	7 13 6½	8 17 9½	9 13 5½	6 18 7½
	11	11	11	11

M.	(1)	(2)	(3)	(4)
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
	8 17 10½	9 16 4½	8 15 10½	7 16 11½
	12	12	12	12

N. Multiply each of the following sums of money, by 7, 8, 9, 10, 11, and 12, separately.

	£	s.	d.		£	s.	d.		£	s.	d.
(a)	8	13	2½	(i)	10	9	6½	(q)	15	19	0½
(b)	6	15	8½	(j)	12	10	6½	(r)	17	13	6½
(c)	2	19	10	(k)	13	8	10½	(s)	18	17	10½
(d)	7	15	9½	(l)	15	17	3½	(t)	15	14	7½
(e)	9	4	11½	(m)	16	15	9½	(u)	19	15	11½
(f)	8	9	8½	(n)	18	10	11	(v)	14	18	9½
(g)	5	15	5½	(o)	15	16	7½	(w)	16	17	5½
(h)	7	19	8½	(p)	17	18	9½	(x)	18	19	10½

Multiply *each* of the following sums of money, by 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12, separately.

- Q.** (1) Two pounds ten shillings and sixpence.
 (2) Three pounds eleven shillings and seven pence farthing.
 (3) Eight pounds and nine pence three farthings.
 (4) Four pounds thirteen shillings and a penny.
- P.** (1) Seven pounds eight shillings and eight pence farthing.
 (2) Nine pounds fourteen shillings and a farthing.
 (3) Eight pounds nineteen shillings and eleven pence.
 (4) Six pounds and ten pence three farthings.
- Q.** (1) Five pounds eleven shillings and nine pence halfpenny.
 (2) Seven pounds fifteen shillings and sixpence farthing.
 (3) Eight pounds seventeen shillings and ten pence.
 (4) Nine pounds eighteen shillings and three farthings.
- R.** (1) Seventeen pounds thirteen shillings and a farthing.
 (2) Nineteen pounds fifteen shillings and seven pence.
 (3) Ten pounds twelve shillings and eleven pence halfpenny.
 (4) Thirteen pounds eighteen shillings and sixpence three farthings.
- S.** (1) Twenty pounds and eight pence.
 (2) Seven pounds seventeen shillings and a halfpenny.
 (3) Sixteen pounds and nine pence three farthings.
 (4) Nineteen pounds eighteen shillings and a penny.
- T.** (1) Twenty-three pounds and nine pence farthing.
 (2) Thirty-five pounds eight shillings and a halfpenny.
 (3) Forty pounds seventeen shillings and eight pence.
 (4) Fifty-seven pounds eleven shillings and sixpence three farthings.
- U.** (1) Thirty-eight pounds ten shillings and a penny three farthings.
 (2) Sixty-four pounds seventeen shillings and ten pence.
 (3) Seventy-three pounds and nine pence halfpenny.
 (4) Forty-five pounds sixteen shillings and seven pence farthing.
- V.** (1) Fifty-seven pounds thirteen shillings and three pence.
 (2) Eighty pounds nine shillings and five pence three farthings.
 (3) Sixty-nine pounds twelve shillings and a penny.
 (4) Ninety-three pounds fifteen shillings and ten pence farthing.

✦

Ex. 40.

	£	s.	d.		£	s.	d.
A. (1)	21	10	$4\frac{1}{2} \times 14, 15$	B. (1)	17	13	$6\frac{1}{2} \times 32, 33$
(2)	34	9	$7\frac{1}{2} \times 16, 18$	(2)	41	10	$8\frac{1}{2} \times 35, 36$
(3)	17	11	$6\frac{1}{2} \times 20, 21$	(3)	29	12	$11\frac{1}{2} \times 40, 42$
(4)	40	13	$5 \times 22, 24$	(4)	37	16	$7 \times 44, 45$
(5)	28	12	$10\frac{1}{2} \times 25, 27$	(5)	50	18	$0\frac{1}{2} \times 48, 50$
(6)	19	15	$8\frac{1}{2} \times 28, 30$	(6)	48	17	$9\frac{1}{2} \times 54, 55$

	£	s.	d.		£	s.	d.
C. (1)	38	16	$7\frac{1}{2} \times 56, 60$	D. (1)	53	17	$7\frac{1}{2} \times 90, 96$
(2)	47	0	$10\frac{1}{2} \times 63, 64$	(2)	49	18	$0\frac{1}{2} \times 99, 100$
(3)	50	18	$9 \times 66, 70$	(3)	70	10	$11\frac{1}{2} \times 108, 110$
(4)	36	19	$5\frac{1}{2} \times 72, 77$	(4)	83	13	$3\frac{1}{2} \times 120, 121$
(5)	73	15	$1\frac{1}{2} \times 80, 81$	(5)	47	19	$0\frac{1}{2} \times 132, 144$
(6)	50	14	$10\frac{1}{2} \times 84, 88$	(6)	95	15	$11\frac{1}{2} \times 81, 132$

E. Multiply *each* of the following sums of money, by 49, 72, 84, 132, and 121, separately.

- (1) Fifty-three pounds seventeen shillings and a halfpenny.
- (2) Forty-seven pounds eighteen shillings and sixpence three farthings.
- (3) Forty-nine pounds fifteen shillings and ten pence.
- (4) Thirty-eight pounds nineteen shillings and seven pence farthing.
- (5) Seventy pounds and eleven pence three farthings.
- (6) Sixty-six pounds fourteen shillings and three halfpence.

Ex. 41.

A. Multiply *each* of the following sums of money, by 13, 17, 19, 23, 26, and 29, separately.

	£	s.	d.		£	s.	d.		£	s.	d.
(a)	123	15	$6\frac{1}{2}$	(i)	407	13	$5\frac{1}{2}$	(q)	528	16	$5\frac{1}{2}$
(b)	205	0	$1\frac{1}{2}$	(j)	173	15	$0\frac{1}{2}$	(r)	219	18	$4\frac{1}{2}$
(c)	341	11	$5\frac{1}{2}$	(k)	286	14	$7\frac{1}{2}$	(s)	307	10	$9\frac{1}{2}$
(d)	152	12	$7\frac{1}{2}$	(l)	690	12	$10\frac{1}{2}$	(t)	163	15	$0\frac{1}{2}$
(e)	270	13	3	(m)	189	10	$11\frac{1}{2}$	(u)	297	18	$10\frac{1}{2}$
(f)	508	10	$11\frac{1}{2}$	(n)	305	16	$5\frac{1}{2}$	(v)	829	17	$6\frac{1}{2}$
(g)	429	14	$9\frac{1}{2}$	(o)	870	13	$8\frac{1}{2}$	(w)	578	19	$7\frac{1}{2}$
(h)	386	17	$8\frac{1}{2}$	(p)	723	15	$1\frac{1}{2}$	(x)	428	15	$8\frac{1}{2}$

	£	s.	d.	
B. (1)	120	10	2	$\times 31, 34, 37$
(2)	204	8	$8\frac{1}{2}$	$\times 38, 39, 41$
(3)	138	12	$5\frac{1}{2}$	$\times 43, 46, 47$
(4)	529	0	$11\frac{3}{4}$	$\times 51, 52, 53$

	£	s.	d.	
C. (1)	234	13	$4\frac{1}{2}$	$\times 57, 58, 59$
(2)	160	16	10	$\times 61, 62, 65$
(3)	373	11	$7\frac{3}{4}$	$\times 67, 68, 69$
(4)	580	15	$0\frac{1}{2}$	$\times 71, 73, 74$

	£	s.	d.	
D. (1)	309	16	$8\frac{1}{2}$	$\times 75, 76, 78$
(2)	209	18	$11\frac{1}{2}$	$\times 79, 82, 83$
(3)	197	0	$5\frac{3}{4}$	$\times 85, 86, 87$
(4)	736	14	$7\frac{1}{2}$	$\times 89, 91, 93$

	£	s.	d.	
E. (1)	643	18	$8\frac{1}{2}$	$\times 94, 95, 97$
(2)	380	19	9	$\times 98, 101, 102$
(3)	529	15	$10\frac{3}{4}$	$\times 104, 107, 109$
(4)	768	17	$3\frac{1}{2}$	$\times 111, 113, 117$

	£	s.	d.	
F. (1)	415	17	$5\frac{3}{4}$	$\times 118, 123, 138$
(2)	209	18	$0\frac{1}{2}$	$\times 140, 139, 146$
(3)	597	19	$9\frac{3}{4}$	$\times 183, 187, 190$
(4)	386	15	$8\frac{1}{2}$	$\times 200, 204, 220$

	£	s.	d.	
G. (1)	587	15	$9\frac{1}{2}$	$\times 310, 357, 406$
(2)	329	10	$11\frac{3}{4}$	$\times 570, 483, 705$
(3)	689	18	$6\frac{1}{2}$	$\times 459, 807, 900$
(4)	473	17	$8\frac{3}{4}$	$\times 638, 490, 779$

	£	s.	d.	
H. (1)	209	14	$10\frac{1}{2}$	$\times 1,000, 1,010$
(2)	420	10	$5\frac{1}{2}$	$\times 1,230, 1,040$
(3)	385	17	$6\frac{3}{4}$	$\times 1,500, 1,603$
(4)	179	18	$11\frac{1}{2}$	$\times 1,760, 1,527$

	£	s.	d.	
I. (1)	307	18	$5\frac{3}{4}$	$\times 2,000, 2,030$
(2)	729	11	$11\frac{1}{2}$	$\times 2,500, 3,509$
(3)	900	0	$8\frac{3}{4}$	$\times 4,780, 5,083$
(4)	608	15	$7\frac{1}{2}$	$\times 3,456, 6,708$

	£	s.	d.	
J. (1)	2,387	13	$5\frac{1}{2}$	$\times 7,539$
(2)	1,009	17	$9\frac{3}{4}$	$\times 8,880$
(3)	7,263	15	$11\frac{1}{2}$	$\times 6,098$
(4)	3,508	19	$0\frac{3}{4}$	$\times 9,500$

	£	s.	d.	
K. (1)	5,528	10	$10\frac{1}{2}$	$\times 5,678$
(2)	2,097	19	$9\frac{1}{2}$	$\times 7,090$
(3)	3,876	15	$7\frac{3}{4}$	$\times 8,789$
(4)	5,989	18	$11\frac{3}{4}$	$\times 9,098$

- L.** (1) Multiply £7,095 17s. $6\frac{1}{2}$ d., by ten thousand and eleven.
 (2) Multiply £5,603 18s. $7\frac{3}{4}$ d., by eighteen thousand and twenty.
 (3) Multiply £8,071 10s. $11\frac{1}{2}$ d., by twenty thousand and one.
 (4) Multiply £9,765 19s. $10\frac{3}{4}$ d., by fifteen thousand five hundred.

Ex. 42.

- A. (1) Find the cost of nineteen shawls, at £2 11s. 6d. each.
- (2) How much in all would a farmer have to pay for thirteen sheep, at £3 7s. each, and half-a-dozen cows, the average price of each being £12 15s. 9d.?
- (3) If a man earns £2 0s. 5½d. per week, find his annual income.
- (4) What sum of money will be required to pay 76 men each £1 13s. 11½d.?
- B. (1) What are a gross of knives worth, at half-a-guinea a dozen?
- (2) If a labourer's daily wage is 3s. 9d., what will he have earned in seventeen weeks of six days each?
- (3) Multiply the sum of £10 10s. 0½d. and £58 8s. 11½d., by 2,509.
- (4) A horse and its harness together cost a hundred guineas. The harness was worth £27 18s. 0½d.: find the price of 150 horses.
- C. (1) If it takes £137 0s. 11½d. to build one house, what would be the cost of building a row of fifty-nine?
- (2) Find the value of 109 tons of hay, at £8 19s. 9d. per ton.
- (3) A lady bought 27 yards of ribbon, at 1s. 11½d. per yard. If she presented a five pound note as payment, what change ought she to receive?
- (4) Find the total cost of the following,—7 lbs. of beef, at 10½d. per lb.; 10 lbs. of mutton, at 8½d. per lb.; and a dozen pounds of pork, at 9½d. per lb.
- D. (1) A gentleman wanted to buy eight books, the average price of which was 3s. 11½d.; but he found upon counting his money that he had only one pound and sixpence: how much was he short?
- (2) What are 278 dresses worth, at £5 18s. 6d. each?
- (3) How much income-tax would a person have to pay at three pence farthing in the pound, if he earned £405 a year?
- (4) If land is let at £3 2s. 6d. an acre, what rent will a farmer have to pay if he has three fields, containing respectively 27 acres, 13 acres, and 9 acres?

COMPOUND DIVISION.

Ex. 43.

A.	(1)	(2)	(3)	(4)
	$\begin{array}{r} s. \quad d. \\ 2) \ 2 \ 4 \\ \hline \end{array}$	$\begin{array}{r} s. \quad d. \\ 2) \ 4 \ 6 \\ \hline \end{array}$	$\begin{array}{r} s. \quad d. \\ 2) \ 8 \ 2\frac{1}{2} \\ \hline \end{array}$	$\begin{array}{r} s. \quad d. \\ 2) \ 3 \ 2\frac{1}{2} \\ \hline \end{array}$
B.	(1)	(2)	(3)	(4)
	$\begin{array}{r} s. \quad d. \\ 3) \ 3 \ 9 \\ \hline \end{array}$	$\begin{array}{r} s. \quad d. \\ 3) \ 6 \ 6\frac{1}{2} \\ \hline \end{array}$	$\begin{array}{r} s. \quad d. \\ 3) \ 4 \ 0 \\ \hline \end{array}$	$\begin{array}{r} s. \quad d. \\ 3) \ 7 \ 8\frac{1}{2} \\ \hline \end{array}$
C.	(1)	(2)	(3)	(4)
	$\begin{array}{r} s. \quad d. \\ 4) \ 8 \ 1 \\ \hline \end{array}$	$\begin{array}{r} s. \quad d. \\ 4) \ 7 \ 3 \\ \hline \end{array}$	$\begin{array}{r} s. \quad d. \\ 4) \ 5 \ 8\frac{1}{2} \\ \hline \end{array}$	$\begin{array}{r} s. \quad d. \\ 4) \ 9 \ 10 \\ \hline \end{array}$
D.	(1)	(2)	(3)	(4)
	$\begin{array}{r} s. \quad d. \\ 5) \ 6 \ 1\frac{1}{2} \\ \hline \end{array}$	$\begin{array}{r} s. \quad d. \\ 5) \ 5 \ 0\frac{1}{2} \\ \hline \end{array}$	$\begin{array}{r} s. \quad d. \\ 5) \ 3 \ 8\frac{1}{2} \\ \hline \end{array}$	$\begin{array}{r} s. \quad d. \\ 5) \ 9 \ 11\frac{1}{2} \\ \hline \end{array}$
E.	(1)	(2)	(3)	(4)
	$\begin{array}{r} s. \quad d. \\ 6) \ 1 \ 3\frac{1}{2} \\ \hline \end{array}$	$\begin{array}{r} s. \quad d. \\ 6) \ 8 \ 5\frac{1}{2} \\ \hline \end{array}$	$\begin{array}{r} s. \quad d. \\ 6) \ 9 \ 10\frac{1}{2} \\ \hline \end{array}$	$\begin{array}{r} s. \quad d. \\ 6) \ 9 \ 11\frac{1}{2} \\ \hline \end{array}$
F.	(1)	(2)	(3)	(4)
	$\begin{array}{r} s. \quad d. \\ 7) \ 8 \ 9 \\ \hline \end{array}$	$\begin{array}{r} s. \quad d. \\ 7) \ 3 \ 0\frac{1}{2} \\ \hline \end{array}$	$\begin{array}{r} s. \quad d. \\ 7) \ 7 \ 10\frac{1}{2} \\ \hline \end{array}$	$\begin{array}{r} s. \quad d. \\ 7) \ 9 \ 9\frac{1}{2} \\ \hline \end{array}$

G. Divide *each* of the following sums of money, by 2, 3, 4, 5, 6, and 7, separately.

	$s.$	$d.$		$s.$	$d.$		$s.$	$d.$
(a)	1	$0\frac{1}{2}$	(i)	5	$8\frac{1}{2}$	(q)	10	$2\frac{1}{2}$
(b)	2	3	(j)	6	$1\frac{1}{2}$	(r)	13	5
(c)	2	$5\frac{1}{2}$	(k)	6	10	(s)	15	$0\frac{1}{2}$
(d)	3	1	(l)	7	3	(t)	14	$6\frac{1}{2}$
(e)	3	$8\frac{1}{2}$	(m)	7	$8\frac{1}{2}$	(u)	17	$7\frac{1}{2}$
(f)	4	$6\frac{1}{2}$	(n)	8	$9\frac{1}{2}$	(v)	18	$0\frac{1}{2}$
(g)	4	10	(o)	9	$10\frac{1}{2}$	(w)	16	$9\frac{1}{2}$
(h)	5	$3\frac{1}{2}$	(p)	9	$11\frac{1}{2}$	(x)	19	$10\frac{1}{2}$

H.	(1) $\begin{array}{r} \text{£} \quad \text{s.} \quad \text{d.} \\ 7) 1 \quad 4 \quad 6 \\ \hline \end{array}$	(2) $\begin{array}{r} \text{£} \quad \text{s.} \quad \text{d.} \\ 7) 2 \quad 10 \quad 4\frac{1}{2} \\ \hline \end{array}$	(3) $\begin{array}{r} \text{£} \quad \text{s.} \quad \text{d.} \\ 7) 5 \quad 6 \quad 6 \\ \hline \end{array}$	(4) $\begin{array}{r} \text{£} \quad \text{s.} \quad \text{d.} \\ 7) 8 \quad 9 \quad 11\frac{1}{2} \\ \hline \end{array}$
I.	(1) $\begin{array}{r} \text{£} \quad \text{s.} \quad \text{d.} \\ 8) 2 \quad 3 \quad 1\frac{1}{2} \\ \hline \end{array}$	(2) $\begin{array}{r} \text{£} \quad \text{s.} \quad \text{d.} \\ 8) 4 \quad 0 \quad 10 \\ \hline \end{array}$	(3) $\begin{array}{r} \text{£} \quad \text{s.} \quad \text{d.} \\ 8) 9 \quad 9 \quad 8\frac{3}{4} \\ \hline \end{array}$	(4) $\begin{array}{r} \text{£} \quad \text{s.} \quad \text{d.} \\ 8) 10 \quad 2 \quad 6\frac{1}{2} \\ \hline \end{array}$
J.	(1) $\begin{array}{r} \text{£} \quad \text{s.} \quad \text{d.} \\ 9) 9 \quad 14 \quad 3 \\ \hline \end{array}$	(2) $\begin{array}{r} \text{£} \quad \text{s.} \quad \text{d.} \\ 9) 10 \quad 7 \quad 6\frac{2}{3} \\ \hline \end{array}$	(3) $\begin{array}{r} \text{£} \quad \text{s.} \quad \text{d.} \\ 9) 5 \quad 19 \quad 0\frac{1}{2} \\ \hline \end{array}$	(4) $\begin{array}{r} \text{£} \quad \text{s.} \quad \text{d.} \\ 9) 6 \quad 6 \quad 9\frac{3}{4} \\ \hline \end{array}$
K.	(1) $\begin{array}{r} \text{£} \quad \text{s.} \quad \text{d.} \\ 10) 4 \quad 4 \quad 6 \\ \hline \end{array}$	(2) $\begin{array}{r} \text{£} \quad \text{s.} \quad \text{d.} \\ 10) 6 \quad 10 \quad 6\frac{1}{2} \\ \hline \end{array}$	(3) $\begin{array}{r} \text{£} \quad \text{s.} \quad \text{d.} \\ 10) 12 \quad 13 \quad 9\frac{1}{2} \\ \hline \end{array}$	(4) $\begin{array}{r} \text{£} \quad \text{s.} \quad \text{d.} \\ 10) 18 \quad 13 \quad 4\frac{1}{2} \\ \hline \end{array}$
L.	(1) $\begin{array}{r} \text{£} \quad \text{s.} \quad \text{d.} \\ 11) 3 \quad 6 \quad 5\frac{1}{2} \\ \hline \end{array}$	(2) $\begin{array}{r} \text{£} \quad \text{s.} \quad \text{d.} \\ 11) 5 \quad 11 \quad 11 \\ \hline \end{array}$	(3) $\begin{array}{r} \text{£} \quad \text{s.} \quad \text{d.} \\ 11) 13 \quad 10 \quad 6\frac{1}{2} \\ \hline \end{array}$	(4) $\begin{array}{r} \text{£} \quad \text{s.} \quad \text{d.} \\ 11) 29 \quad 13 \quad 7\frac{3}{4} \\ \hline \end{array}$
M.	(1) $\begin{array}{r} \text{£} \quad \text{s.} \quad \text{d.} \\ 12) 6 \quad 12 \quad 6 \\ \hline \end{array}$	(2) $\begin{array}{r} \text{£} \quad \text{s.} \quad \text{d.} \\ 12) 8 \quad 10 \quad 3\frac{1}{2} \\ \hline \end{array}$	(3) $\begin{array}{r} \text{£} \quad \text{s.} \quad \text{d.} \\ 12) 15 \quad 17 \quad 8\frac{3}{4} \\ \hline \end{array}$	(4) $\begin{array}{r} \text{£} \quad \text{s.} \quad \text{d.} \\ 12) 18 \quad 19 \quad 11\frac{1}{2} \\ \hline \end{array}$

Divide *each* of the following sums of money, by 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12, separately.

- N.** (a) Eight pounds two shillings and nine pence farthing.
 (b) Nine pounds fifteen shillings and a halfpenny.
 (c) Three pounds ten shillings and sixpence.
 (d) Five pounds eleven shillings and eleven pence three farthings.
- O.** (a) Two pounds nine shillings and eight pence halfpenny.
 (b) Three pounds eighteen shillings and nine pence farthing.
 (c) Seven pounds eighteen shillings and eight pence farthing.
 (d) Nine pounds nineteen shillings and five pence halfpenny.
- P.** (a) Eight pounds thirteen shillings and sixpence farthing.
 (b) Five pounds fourteen shillings and two pence three farthings.
 (c) Nine pounds six shillings and ten pence halfpenny.
 (d) Eight pounds ten shillings and seven pence farthing.

Ex. 44.

	£	s.	d.		£	s.	d.
A. (1)	25	13	6 ÷ 14, 15, 16	B. (1)	42	10	9½ ÷ 32, 33, 35
(2)	80	0	1½ ÷ 18, 20, 21	(2)	50	15	3¾ ÷ 36, 40, 42
(3)	29	11	10½ ÷ 22, 24, 25	(3)	53	16	11½ ÷ 44, 45, 48
(4)	87	14	7¾ ÷ 27, 28, 30	(4)	66	18	8½ ÷ 49, 50, 54
C. (1)	70	13	0½ ÷ 55, 56, 60	D. (1)	69	13	11 ÷ 88, 90, 96
(2)	73	0	11¾ ÷ 63, 64, 66	(2)	83	17	1½ ÷ 99, 100, 108
(3)	79	15	9½ ÷ 70, 72, 77	(3)	87	11	10¾ ÷ 110, 120, 121
(4)	80	18	5 ÷ 80, 81, 84	(4)	94	13	6½ ÷ 121, 132, 144

E. Divide *each* of the following sums of money, by 49, 81, 84, 108, 110, and 132, separately.

- Eight hundred pounds and nine pence three farthings.
- Two hundred and fifty pounds ten shillings.
- Five hundred pounds and a halfpenny.
- Nine hundred and eight pounds and a penny.

Ex. 45.

	£	s.	d.		£	s.	d.
A. (1)	209	10	5½ ÷ 13, 17, 19	B. (1)	527	11	0½ ÷ 43, 46, 47
(2)	120	0	0¾ ÷ 23, 26, 29	(2)	130	15	11 ÷ 51, 52, 53
(3)	310	11	6 ÷ 31, 34, 37	(3)	400	0	10¾ ÷ 57, 58, 59
(4)	608	15	3½ ÷ 38, 39, 41	(4)	770	17	7½ ÷ 61, 62, 65
C. (1)	683	10	10½ ÷ 67, 68, 69	D. (1)	459	13	8½ ÷ 85, 86, 87
(2)	790	18	9½ ÷ 71, 73, 74	(2)	700	10	11¾ ÷ 89, 91, 92
(3)	800	19	1 ÷ 75, 76, 78	(3)	889	18	0½ ÷ 93, 94, 95
(4)	589	17	8¾ ÷ 79, 82, 83	(4)	100	0	7¾ ÷ 97, 98, 101
E. (1)	1,000	4	5½ ÷ 103, 106	F. (1)	3,206	14	11 ÷ 133, 135
(2)	2,070	10	6 ÷ 107, 109	(2)	5,001	19	3½ ÷ 137, 138
(3)	1,532	13	0¾ ÷ 113, 125	(3)	2,980	15	10½ ÷ 141, 143
(4)	1,809	15	7½ ÷ 127, 129	(4)	1,234	18	9¾ ÷ 145, 149

H.	(1)	(2)	(3)	(4)
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
7)	1 4 6	7) 2 10 4½	7) 5 6 6	7) 8 9 11½

I.	(1)	(2)	(3)	(4)
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
8)	2 3 1½	8) 4 0 10	8) 9 9 8½	8) 10 2 6½

J.	(1)	(2)	(3)	(4)
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
9)	9 14 3	9) 10 7 6½	9) 5 19 0½	9) 6 6 9½

K.	(1)	(2)	(3)	(4)
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
10)	4 4 6	10) 6 10 6½	10) 12 13 9½	10) 18 13 4½

L.	(1)	(2)	(3)	(4)
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
11)	3 6 5½	11) 5 11 11	11) 13 10 6½	11) 29 13 7½

M.	(1)	(2)	(3)	(4)
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
12)	6 12 6	12) 8 10 3½	12) 15 17 8½	12) 18 19 11½

Divide *each* of the following sums of money, by 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12, separately.

- N.** (a) Eight pounds two shillings and nine pence farthing.
 (b) Nine pounds fifteen shillings and a halfpenny.
 (c) Three pounds ten shillings and sixpence.
 (d) Five pounds eleven shillings and eleven pence three farthings.
- O.** (a) Two pounds nine shillings and eight pence halfpenny.
 (b) Three pounds eighteen shillings and nine pence farthing.
 (c) Seven pounds eighteen shillings and eight pence farthing.
 (d) Nine pounds nineteen shillings and five pence halfpenny.
- P.** (a) Eight pounds thirteen shillings and sixpence farthing.
 (b) Five pounds fourteen shillings and two pence three farthings.
 (c) Nine pounds six shillings and ten pence halfpenny.
 (d) Eight pounds ten shillings and seven pence farthing.

Ex. 44.

	£	s.	d.		£	s.	d.	
A. (1)	25	13	6	÷ 14, 15, 16	B. (1)	42	10	9½ ÷ 32, 33, 35
(2)	30	0	1½	÷ 18, 20, 21	(2)	50	15	3¾ ÷ 36, 40, 42
(3)	29	11	10½	÷ 22, 24, 25	(3)	53	16	11½ ÷ 44, 45, 48
(4)	37	14	7¾	÷ 27, 28, 30	(4)	66	18	8½ ÷ 49, 50, 54

	£	s.	d.		£	s.	d.
C. (1)	70	13	0½ ÷ 55, 56, 60	D. (1)	69	13	11 ÷ 88, 90, 96
(2)	73	0	11¾ ÷ 63, 64, 66	(2)	83	17	1½ ÷ 99, 100, 108
(3)	79	15	9½ ÷ 70, 72, 77	(3)	87	11	10¾ ÷ 110, 120, 121
(4)	80	18	5 ÷ 80, 81, 84	(4)	94	13	6½ ÷ 121, 132, 144

E. Divide *each* of the following sums of money, by 49, 81, 84, 108, 110, and 132, separately.

- Eight hundred pounds and nine pence three farthings.
- Two hundred and fifty pounds ten shillings.
- Five hundred pounds and a halfpenny.
- Nine hundred and eight pounds and a penny.

Ex. 45.

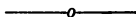
A.				B.			
	£	s.	d.		£	s.	d.
(1)	209	10	5½ ÷ 13, 17, 19	(1)	527	11	0½ ÷ 43, 46, 47
(2)	120	0	0¾ ÷ 23, 26, 29	(2)	130	15	11 ÷ 51, 52, 53
(3)	310	11	6 ÷ 31, 34, 37	(3)	400	0	10¾ ÷ 57, 58, 59
(4)	608	15	3½ ÷ 38, 39, 41	(4)	770	17	7½ ÷ 61, 62, 65

	£	s.	d.		£	s.	d.
C. (1)	683	10	10½ ÷ 67, 68, 69	D. (1)	459	13	8½ ÷ 85, 86, 87
(2)	790	18	9½ ÷ 71, 73, 74	(2)	700	10	11¾ ÷ 89, 91, 92
(3)	800	19	1 ÷ 75, 76, 78	(3)	889	18	0½ ÷ 93, 94, 95
(4)	589	17	8¾ ÷ 79, 82, 83	(4)	100	0	7¾ ÷ 97, 98, 101

	£	s.	d.		£	s.	d.
E. (1)	1,000	4	5½ ÷ 103, 106	F. (1)	3,206	14	11 ÷ 133, 135
(2)	2,070	10	6 ÷ 107, 109	(2)	5,001	19	3½ ÷ 137, 138
(3)	1,532	13	0¾ ÷ 113, 125	(3)	2,980	15	10½ ÷ 141, 143
(4)	1,809	15	7½ ÷ 127, 129	(4)	1,234	18	9¾ ÷ 145, 149

- G.** (1) Divide two thousand and twelve pounds eighteen shillings and a halfpenny, by seven hundred and fifty.
- (2) Divide four thousand five hundred pounds ten shillings and nine pence farthing, by three hundred and eighty-nine.
- (3) Divide one thousand nine hundred and five pounds sixteen shillings and four pence three farthings, by six hundred and seventy-eight.
- (4) Divide five thousand pounds, by nine hundred and nine.
- H.** (1) Divide twenty thousand and ten pounds ten shillings, by two thousand nine hundred.
- (2) Divide ten thousand and four pounds and a halfpenny, by three thousand and eighty-seven.
- (3) Divide thirty-seven thousand and eleven pounds and eleven pence, by four thousand eight hundred and five.
- (4) Divide fifteen thousand and five pounds, by seven thousand three hundred and forty-six.
- I.** (1) Divide thirty thousand and thirty pounds thirteen shillings and eight pence farthing, by four thousand and seventy-eight.
- (2) Divide fifty-seven thousand and ninety pounds nineteen shillings and seven pence halfpenny, by five thousand and eighty-nine.
- (3) Divide sixty-eight thousand pounds, by seven thousand nine hundred and sixty-five.
- (4) Divide ten thousand pounds, by eight thousand seven hundred and fifty.
- J.** (1) Divide seventy thousand five hundred and two pounds and a penny, by five thousand six hundred and seventy-eight.
- (2) Divide eighty thousand one hundred pounds, by nine thousand and sixty-nine.
- (3) Divide eleven thousand and ten pounds thirteen shillings and eleven pence three farthings, by eight thousand eight hundred and eighty-eight.
- (4) Divide twenty-five thousand and fifteen pounds and five pence farthing, by nine thousand eight hundred and ninety-nine.

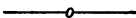
	£	s.	d.	
K. (1)	201,043	2	8½ ÷ 3,876,	4,297, 5,678, 32,585
(2)	123,456	11	10 ÷ 4,790,	5,088, 3,849, 49,207
(3)	500,101	15	9½ ÷ 2,567,	3,456, 7,257, 82,008
(4)	250,300	10	11½ ÷ 7,088,	8,479, 9,596, 56,789
(5)	3,105,254	17	7¼ ÷ 6,776,	5,968, 8,749, 77,397
(6)	5,010,880	19	11½ ÷ 7,839,	8,797, 9,563, 89,789



FRACTIONAL MULTIPLICATION (MONEY).

Ex. 46.

A.	£	s.	d.		B.	£	s.	d.
(1)	20	12	4	$\times \frac{1}{2}, \frac{1}{3}, \frac{1}{4}$	(1)	100	14	$1 \times 1\frac{1}{2}, 2\frac{1}{2}, 2\frac{1}{2}$
(2)	53	15	5	$\times \frac{1}{2}, \frac{1}{3}, \frac{1}{4}$	(2)	120	15	$0\frac{1}{2} \times 3\frac{1}{2}, 5\frac{1}{2}, 6\frac{1}{2}$
(3)	88	14	9½	$\times \frac{1}{2}, \frac{1}{3}, \frac{1}{4}$	(3)	288	18	$8\frac{1}{2} \times 8\frac{1}{2}, 10\frac{1}{2}, 12\frac{1}{2}$
(4)	60	16	8½	$\times \frac{1}{2}, \frac{1}{3}, \frac{1}{4}$	(4)	300	10	$9\frac{1}{2} \times 15\frac{1}{2}, 23\frac{1}{2}, 41\frac{1}{2}$
(5)	77	17	10½	$\times \frac{1}{2}, \frac{1}{3}, \frac{1}{4}$	(5)	359	16	$11\frac{1}{2} \times 53\frac{1}{2}, 41\frac{1}{2}, 37\frac{1}{2}$
(6)	93	10	11½	$\times \frac{1}{2}, \frac{1}{3}, \frac{1}{4}$	(6)	680	12	$6\frac{1}{2} \times 67\frac{1}{2}, 39\frac{1}{2}, 71\frac{1}{2}$



FRACTIONAL DIVISION (MONEY).

Ex. 47.

A.	£	s.	d.		B.	£	s.	d.
(1)	16	14	6	$\div \frac{1}{2}, \frac{1}{3}, \frac{1}{4}$	(1)	84	16	$5\frac{1}{2} \div 1\frac{1}{2}, 1\frac{1}{2}, 2\frac{1}{2}$
(2)	18	18	8½	$\div \frac{1}{2}, \frac{1}{3}, \frac{1}{4}$	(2)	96	12	$10\frac{1}{2} \div 3\frac{1}{2}, 5\frac{1}{2}, 8\frac{1}{2}$
(3)	20	10	4½	$\div \frac{1}{2}, \frac{1}{3}, \frac{1}{4}$	(3)	100	15	$9\frac{1}{2} \div 10\frac{1}{2}, 12\frac{1}{2}, 13\frac{1}{2}$
(4)	27	15	1½	$\div \frac{1}{2}, \frac{1}{3}, \frac{1}{4}$	(4)	240	18	$11 \div 27\frac{1}{2}, 30\frac{1}{2}, 41\frac{1}{2}$
(5)	30	12	10	$\div \frac{1}{2}, \frac{1}{3}, \frac{1}{4}$	(5)	508	17	$7\frac{1}{2} \div 59\frac{1}{2}, 64\frac{1}{2}, 75\frac{1}{2}$
(6)	46	10	9½	$\div \frac{1}{2}, \frac{1}{3}, \frac{1}{4}$	(6)	800	10	$6\frac{1}{2} \div 100\frac{1}{2}, 109\frac{1}{2}, 208\frac{1}{2}$

Find how many times

	£	s.	d.		£	s.	d.		£	s.	d.
C. (1)	2	13	4	is contained in	5	6	8	and	10	13	4
(2)	3	10	1½	"	85	10	6½	"	170	1	0½
(3)	10	17	10½	"	532	15	11½	"	807	18	10½
(4)	38	15	6½	"	100	0	1½	"	950	10	11

D.		£	s.	d.		£	s.	d.
(1)	By what number must	3	15	0½	be multiplied to give	45	0	3
(2)	"	"	12	10	1	"	250	1 8
(3)	"	"	53	0	9½	"	5,304	1 0½
(4)	"	"	139	17	11½	"	147,032	14 2½

EXAMINATIONS IN COMPOUND DIVISION.

Ex. 48.

- A.** (1) Divide four thousand three hundred and three pounds eleven shillings and sixpence three farthings, by seventy-three.
- (2) Find the eighty-ninth part of seven thousand nine hundred and twenty-one pounds three shillings and eight pence half-penny.
- (3) What is the value of a single bottle of wine, when a case containing twelve dozen is worth fifty-four pounds?
- (4) If a merchant's profits for a year are £1,039 7s., what is his weekly gain?
- B.** (1) Divide thirteen thousand nine hundred and thirty-six pounds four shillings and four pence, by two hundred and eight.
- (2) If £567 2s. 2½d. is divided equally among nineteen persons, find the value of one share.
- (3) Seventy men were paid £105 for a week's work. Find the weekly wage of each man.
- (4) What sum of money must be multiplied by thirteen to give £177 12s. 3d.?
- C.** (1) Find the 376th part of £80,096 15s. 6½d.
- (2) If a row of thirty houses were let for £390 a year, what is the weekly rent of one of the houses?
- (3) Divide a sovereign between three boys and a girl, giving the girl twice as much as a boy.
- (4) If 12½ yards of ribbon cost one pound eleven shillings and three pence, what is a yard worth at the same rate?
- D.** (1) Divide £76,403 11s. into one hundred and nine equal parts.
- (2) If seventy tons of hay are worth five hundred and thirteen pounds six shillings and eight pence, what ought I to pay for half-a-ton?
- (3) A gentleman left ten thousand pounds to be shared as follows:—his widow was to have one quarter of it, and the remainder was to be equally divided among his seven sons and three daughters. Find how much each child will receive.
- (4) If 25 gross of copy-books cost thirty pounds, what is a single book worth?

EXAMINATIONS IN THE COMPOUND RULES (MONEY).

Ex. 49.

- A. (1) Multiply the sum of £15 17s. 0½d., £20 19s. 11½d., and £10 0s. 10d., by twenty.
- (2) If out of £52 I pay away £25 16s. 1½d., £2 17s. 11½d., £9 5s. 3½d., and 7s. 7½d., how much shall I have left?
- (3) Divide £34,161 17s. 11d., by two thousand seven hundred and five.
- (4) If a man earns two pounds per week, how much may he spend per week so as to save thirteen pounds a year?
- B. (1) Express the difference between ten guineas and twenty crowns in sixpences.
- (2) Multiply seventeen pounds and a halfpenny, by one thousand and eleven.
- (3) What does a person receive per day, when his annual income is 300 guineas?
- (4) A person bought 374 eggs at 2 a penny, and some others at 3 for twopence. He paid altogether £1 9s. 11d. How many eggs did he buy at 3 for twopence?
- C. (1) Subtract twenty thousand and one pounds and sixpence, from one hundred thousand and ten pounds and a farthing, and write the difference in words.
- (2) Multiply £3,457 17s. 4½d. by 75, and give the answer in farthings.
- (3) An overcoat and hat together cost five guineas. The overcoat was worth thirty shillings more than the hat. Find the price of each.
- (4) At a pay-office, the sum of £401 0s. 7d. was paid to persons who received £3 13s. 7d. each. How many persons were there?
- D. (1) Divide five thousand four hundred and twenty-nine pounds twelve shillings and three pence three farthings, by seven hundred and eighty-three.
- (2) Tom and Harry together earned a guinea. If Tom earned twice as much as Harry, find how much they each earned.
- (3) Find the value of 29½ yards of velvet at 17s. 6d. a yard.
- (4) After paying out of £100 £20 13s. 4½d. to my butcher, £30 15s. 6½d. to my tailor, and £46 13s. 11½d. to my grocer, I divided the remainder among 27 persons. Find the share of each person.

78 EXAMINATIONS IN THE COMPOUND RULES (MONEY).

- E.** (1) Add together the sum and difference of £30 18s. 0½d. and £9 1s. 0½d., and give the result in halfpence.
- (2) How much greater than a thousand pounds is ninety times £27 13s. 9¾d.?
- (3) How many persons may receive the sum of 4s. 4d. by the equal distribution of £537 11s.?
- (4) A house and its furniture are worth £6,734 5s. 9d.; and the house is worth eight times as much as the furniture. What is the house worth?
- F.** (1) What will 809 times £20 0s. 10½d. amount to?
- (2) If a person earns two guineas a week, and spends three-quarters of it in providing for his family, what will be his annual savings?
- (3) Subtract a thousand groats from a thousand florins, and express the difference in £ s. d.
- (4) A quantity of tea is purchased in bond at 1s. 2d. per lb., to the amount of £100. What duty will be payable on it at 6d. per lb.?
- G.** (1) Find the difference between one hundred and ten thousand pounds and a penny, and nine thousand and nine pounds and a farthing, and write it in words.
- (2) If silk is 10s. 11d. per yard, what shall I have to pay for a piece which measures 11½ yards?
- (3) If one hundred and two thousand three hundred and fifty-four pounds fourteen shillings and eight pence farthing be divided equally amongst ninety-three persons, how much will each receive?
- (4) How often is £1 17s. 6d. contained in £28 2s. 6d.?
- H.** (1) Multiply £98 19s. 9¾d., by six hundred and seventy-eight.
- (2) If twenty dozen articles are worth £178 10s., find the cost of one article.
- (3) John has £26 0s. 6d., and Henry £5 17s. 0½d. more than John. If William has only a guinea less than John, how much have the three together?
- (4) Out of a sum of money, 17 men received 3s. 4½d. each, and there remained 2s. 5¾d. How much was the original sum?

EXAMINATIONS IN THE COMPOUND RULES (MONEY). 79

- I.** (1) What sum of money must be added to £109 0s. 11½d. to make one thousand pounds one shilling?
- (2) The average worth of each of 647 packages was £89 17s. 5½d. What was the worth of all of them together?
- (3) A man's wages for a month of twenty-eight days are four pounds and sixpence. What does he earn daily?
- (4) A grocer buys 96 lbs. of tea at 3s. 6d. a lb. If he sells 24 lbs. at 3s. per lb., at what price must he sell the rest in order to gain two guineas by the whole transaction.
- J.** (1) Find the nine-hundredth part of £2,708,950 6s. 3d.
- (2) What is the difference between 11,728 halfpence, and 69 half-guineas?
- (3) A number of persons subscribed £228 0s. 3d. If on an average they each gave £5 17s. 4½d., find the number of subscribers.
- (4) Divide £1,005 12s. between A and B, so that A may have five times as much as B.
- K.** (1) Multiply seven pounds sixteen shillings and eight pence three farthings, by five thousand four hundred and nine.
- (2) A turkey, goose, and hare, together cost £1 9s. 6d. If the goose cost half-a-crown less than the turkey, which was worth 12s. 6d., find the price of a couple of hares.
- (3) Ninety-eight and a half tons of coal cost one hundred and twenty-three pounds two shillings and sixpence. Find the rate per ton.
- (4) A sum of money is to be divided amongst 9 men 15 women and 19 boys. Each man receives £3 6s. 8d., each woman £1 12s. 9d., and each boy 17s. 6d. What is the sum?
- L.** (1) If a man gets three guineas a week, and puts by £10 a quarter, how much does he spend weekly?
- (2) Reduce 25,685 fourpenny pieces to £ s. d.; then multiply by 60, and afterwards divide this product by 21.
- (3) Land was bought for £442,165 5s. 10½d. If the average price per acre was £97 18s. 5½d., find the number of acres bought.
- (4) A person whose income is £150 a year, spends as much in four days as he earns in three. Find how much he will save in a year.

80 EXAMINATIONS IN THE COMPOUND RULES (MONEY).

- M. (1) What sum of money shall I require to pay 127 workmen each 35s. 6d.?
- (2) What shall I save on the dozen of wine, if instead of buying it bottled at 24s. the dozen, I buy a cask containing 26 dozen for £25 12s. 5d., and bottle it myself, corks and bottles costing 2s. a dozen?
- (3) Find the cost of carriage of 927 tons for 17 miles, at 1½d. per ton per mile.
- (4) Divide £35 5s. 1½d. among A, B, and C, so that B may get twice, and C three times, as much as A.
- N. (1) What will the tax on £2,450 amount to at 2s. 0½d. in the pound?
- (2) By what number must I multiply £12 1s. 1d. to give the following product, £2,832 14s. 7d.?
- (3) Find the cost of thirty thousand and thirty articles, at fifteen pounds eight shillings and eight pence each.
- (4) A sum of £557 4s. was left by a man to his one son and two daughters. The son was to have three parts, while each daughter had two parts. How much had they each?
- O. (1) Subtract 2,500 farthings from 5,209 halfpence, and give the answer in £ s. d.
- (2) If on an average a toll-keeper takes 19s. 0½d. a day, how much would he receive in a year of 313 days?
- (3) An estate is left among three heirs: the first receives £5,000, the second three-fourths of the share of the first, and the third five-sixths of the share of the second. What is the whole value of the estate?
- (4) The receipts of a railway line 1,388 miles long were £84,806 16s. for a week. Find the average receipts per mile for a day.
- P. (1) What sum of money multiplied by 8,070 will give £653,207 13s. 1½d.?
- (2) A thief took a crown out of my pocket. Had he taken as much more, he would have stolen just one quarter of the whole of my money. What sum had I?
- (3) A person's yearly income is £145 3s. 4d. He gives in charity 1s. 6d. a week, and puts by 1s. 6d. a day. What may he spend *daily* to keep out of debt?
- (4) A postman whose pay for a week is 15s. is fined 1s. 6d. if he comes in late, and at the end of 13 weeks he receives £8 15s. 6d. How often was he late?

REDUCTION OF WEIGHTS AND MEASURES.

Ex. 50.

AVOIRDUPOIS WEIGHT.

- | | | |
|-----------------------|-------------------------|--------------------------|
| A. Reduce | B. Reduce | C. Reduce |
| (1) 20 oz. to drams | (1) 20 stones to ounces | (1) 43 tons to lbs. |
| (2) 43 oz. to drams | (2) 14 qrs. to drams | (2) 57 tons to oz. |
| (3) 2 lbs. to drams | (3) 18 cwt. to lbs. | (3) 80 tons to stones |
| (4) 15 lbs. to drams | (4) 56 cwt. to ounces | (4) 39 tons to drams |
| (5) 34 lbs. to drams | (5) 37 cwt. to drams | (5) 28 tons to half-oz. |
| (6) 5 stones to drams | (6) 94 tons to quarters | (6) 66 tons to drams |
| D. Reduce | E. Reduce | F. Reduce |
| (1) 54 drams to oz. | (1) 1,258 oz. to qrs. | (1) 809 stones to cwt. |
| (2) 70 drams to oz. | (2) 3,107 oz. to cwt. | (2) 4,209 stones to tons |
| (3) 198 drams to oz. | (3) 508 lbs. to cwt. | (3) 8,708 lbs. to stones |
| (4) 314 drams to lbs. | (4) 5,870 lbs. to tons | (4) 5,833 oz. to cwt. |
| (5) 560 drams to lbs. | (5) 8,205 oz. to cwt. | (5) 9,009 drams to qrs. |
| (6) 809 drams to lbs. | (6) 9,566 drams to qrs. | (6) 9,687 drams to qrs. |
- G. (1) Reduce 108 tons 17 cwt. 2 qrs. to pounds.**
(2) Reduce 1,683,290 ounces to tons.
(3) Reduce 205 tons 3 qrs. 25 lbs. to ounces.
(4) Reduce 183 tons 19 cwt. 1 qr. 26 lbs. to ounces.
(5) Reduce 256 tons 18 cwt. 2 qrs. 20 lbs. 15 oz. to drams.
(6) Reduce 300 tons 16 cwt. 3 qrs. 27 lbs. 14 oz. 13 drs. to drs.

LONG MEASURE.

- | | | |
|------------------------|-------------------------|-------------------------|
| H. Reduce | I. Reduce | J. Reduce |
| (1) 12 ft. to inches | (1) 17 fur. to ft. | (1) 125 miles to ft. |
| (2) 29 ft. to inches | (2) 29 fur. to in. | (2) 200 miles to inches |
| (3) 22 yds. to inches | (3) 36 fur. to in. | (3) 139 leag. to yds. |
| (4) 30 yds. to inches | (4) 20 miles to yds. | (4) 226 leag. to ft. |
| (5) 6 poles to ft. | (5) 52 miles to ft. | (5) 507 leag. to ft. |
| (6) 18 poles to inches | (6) 29 miles to in. | (6) 606 leag. to inches |
| K. Reduce | L. Reduce | M. Reduce |
| (1) 18 inches to ft. | (1) 187 ft. to poles | (1) 20,160 in. to poles |
| (2) 39 inches to ft. | (2) 1,200 ft. to fur. | (2) 87,005 ft. to poles |
| (3) 87 inches to yds. | (3) 2,806 yds. to miles | (3) 88,064 in. to fur. |
| (4) 90 inches to yds. | (4) 2,769 ft. to fur. | (4) 86,597 in. to miles |
| (5) 95 inches to yds. | (5) 8,230 in. to fur. | (5) 90,284 ft. to leag. |
| (6) 98 inches to yds. | (6) 8,868 in. to fur. | (6) 98,630 in. to miles |
- N. (1) Reduce 3 miles 6 fur. 33 po. to yards.**
(2) Reduce 27 miles 3 fur. 27 po. 3 yds. 1 ft. to inches.
(3) Reduce 68 miles 2 fur. 36 po. 4½ yds. 2 ft. 10 in. to inches
(4) Reduce 10 leag. 7 fur. 30 poles 2 ft. to inches.
(5) Reduce 25 leag. 2 miles 29 poles 8 in. to inches.
(6) Reduce 87 leag. 39 poles 5½ yds. to inches.

CLOTH MEASURE.

O. Reduce

- (1) 16 nls. to in.
- (2) 88 nls. to in.
- (3) 20 qrs. to in.
- (4) 57 yds. to in.
- (5) 96 yds. to in.
- (6) 99 yds. to in.

P. Reduce

- (1) 12 Flem. ells to in.
- (2) 20 Flem. ells to nls.
- (3) 34 Eng. ells to nls.
- (4) 36 Fren. ells to in.
- (5) 40 Flem. ells to yds.
- (6) 50 Eng. ells to yds.

Q. Reduce

- (1) 8 Fren. ells 2 qrs. to nls.
- (2) 10 Eng. ells 3 nls. to in.
- (3) 60 Eng. ells to Fren. ells
- (4) 50 Fren. ells to Eng. ells
- (5) 4 Flem. ells 2 in. to in.
- (6) 30 Flem. ells to Fren. ells

SQUARE MEASURE.

R. Reduce

- (1) 80 sq. ft. to sq. in.
- (2) 149 sq. ft. to sq. in.
- (3) 160 sq. yds. to sq. in.
- (4) 220 sq. yds. to sq. in.
- (5) 120 sq. po. to sq. ft.
- (6) 200 sq. po. to sq. in.

S. Reduce

- (1) 404 sq. po. to sq. in.
- (2) 3 ro. 30 sq. po. $20\frac{1}{2}$ sq. yds. to sq. ft.
- (3) 2 ro. 38 sq. po. $27\frac{1}{2}$ sq. yds. 6 sq. ft. to sq. in.
- (4) 12 ac. 1 ro. 30 sq. yds. 3 sq. ft. to sq. ft.
- (5) 15 ac. 27 sq. po. $29\frac{1}{2}$ sq. yds. to sq. inches.
- (6) 21 ac. 3 ro. $23\frac{1}{2}$ sq. yds. 7 sq. ft. 100 sq. in. to sq. in.

T.

- (1) Reduce 38 ac. 3 ro. 38 sq. po. 30 sq. yds. 137 sq. in. to sq. inches
- (2) Reduce 8 sq. miles 386 ac. 26 sq. po. to sq. poles
- (3) Reduce 12 sq. miles 500 ac. 1 ro. 8 sq. ft. to sq. ft.
- (4) Reduce 20 sq. miles to square yards
- (5) Reduce 6 sq. miles 20 ac. 2 ro. 39 sq. po. 6 sq. ft. to sq. ft.
- (6) Reduce 33 sq. miles 630 ac. 3 ro. 30 sq. po. $28\frac{1}{2}$ sq. yds. to sq. in

U. Reduce

- (1) 2,560 sq. in. to sq. ft.
- (2) 10,028 sq. in. to sq. yds.
- (3) 12,640 sq. in. to sq. yds.
- (4) 30,209 sq. ft. to sq. poles
- (5) 63,254 sq. ft. to ro.
- (6) 80,070 sq. in. to sq. poles

V. Reduce

- (1) 128,654 sq. in. to sq. poles
- (2) 280,268 sq. ft. to ac.
- (3) 500,019 sq. in. to sq. poles
- (4) 678,750 sq. ft. to acres
- (5) 806,526 sq. in. to sq. poles
- (6) 909,008 sq. in. to sq. poles

CUBIC MEASURE.

V. Reduce	X. Reduce
(1) 25 cub. ft. to cub. in.	(1) 2,540 cub. in. to cub. ft.
(2) 36 cub. ft. to cub. in.	(2) 32,086 cub. in. to cub. ft.
(3) 51 cub. yd. to cub. in.	(3) 56,274 cub. ft. to cub. yd.
(4) 82 cub. yd. to cub. in.	(4) 63,087 cub. in. to cub. yd.
(5) 95 cub. yd. to cub. in.	(5) 87,266 cub. in. to cub. yd.
(6) 89 cub. yd. to cub. in.	(6) 98,765 cub. in. to cub. yd.

- Y. (1) How many cubic inches in 25 cub. ft. 1,201 cubic inches?
 (2) Reduce to cubic inches—12 cub. yd. 18 cub. ft. 1,234 cub. in.
 (3) Reduce 82 cub. yd. 26 cub. ft. 1,659 cub. in. to cub. in.
 (4) Reduce 79 cub. yd. 1,729 cub. in. to cubic inches.
 (5) Reduce 1,265,289 cub. in. to cub. yd.
 (6) Reduce 2,853,654 cub. in. to cub. yd.

 Ex. 51.

TIME.

A. Reduce	B. Reduce	C. Reduce
(1) 80 min. to sec.	(1) 38 mo. to sec.	(1) 1 cen. to days
(2) 57 hr. to sec.	(2) 12 yr. to wk.	(2) 20 yr. to hr.
(3) 49 days to sec.	(3) 53 yr. to days	(3) 53 mo. to sec.
(4) 83 days to sec.	(4) 47 yr. to hr.	(4) 30 cen. to hrs.
(5) 60 weeks to sec.	(5) 77 yr. to min.	(5) 11 lp. yr. to min.
(6) 77 mo. to sec.	(6) 89 yr. to sec.	(6) 12 lp. yr. to sec.

D. Reduce	E. Reduce	F. Reduce
(1) 305 sec. to min.	(1) 12,106 sec. to hrs.	(1) 291,483 min. to mo.
(2) 2,014 sec. to min.	(2) 38,275 min. to dy.	(2) 356,365 wk. to yr.
(3) 3,268 sec. to min.	(3) 52,869 min. to wk.	(3) 826,395 hr. to lp. yr.
(4) 4,529 sec. to hrs.	(4) 39,525 min. to wk.	(4) 932,015 days to cen.
(5) 5,678 sec. to hrs.	(5) 63,275 min. to mo.	(5) 956,205 hr. to cen.
(6) 8,290 sec. to hrs.	(6) 83,759 min. to mo.	(6) 987,678 wk. to cen.

G. (1) Reduce 1,234,567 days to centuries.
 (2) How many hours in 87 yr. 10 mo. 18 hr.?
 (3) Reduce 2 cen. 70 yr. 347 dy. to days.
 (4) How many sec. in a leap year?
 (5) Reduce 28,267,018 hr. to years.
 (6) Reduce 38,156,280 min. to years.

LIQUID MEASURE.

H. Reduce

- (1) 18 pints to gills
- (2) 35 pints to gills
- (3) 17 qts. to gills
- (4) 43 qts. to gills
- (5) 13 galls. to gills
- (6) 50 galls. to gills

I. Reduce

- (1) 93 galls. to gills
- (2) 36 pks. to pts.
- (3) 75 pks. to gills
- (4) 14 bus. to pts.
- (5) 20 bus. to gills
- (6) 18 qrs. to pts.

J. Reduce

- (1) 27 qrs. to gills
- (2) 53 loads to qts.
- (3) 89 qrs. to gills
- (4) 67 loads to pts.
- (5) 83 loads to gills
- (6) 99 loads to gills

K. Reduce

- (1) 380 gills to pts.
- (2) 475 gills to qts.
- (3) 508 gills to qts.
- (4) 800 pts. to galls.
- (5) 865 gills to galls.
- (6) 980 gills to galls

L. Reduce

- (1) 1,207 gills to galls.
- (2) 2,346 pts. to pks.
- (3) 3,028 pts. to bus.
- (4) 6,209 gills to bus.
- (5) 7,766 gills to qrs.
- (6) 8,014 pts. to loads.

M. Reduce

- (1) 19,201 pts. to loads
- (2) 23,026 gills to bus.
- (3) 30,289 pts. to pecks
- (4) 47,294 gills to loads
- (5) 52,438 qts. to loads
- (6) 87,201 gills to loads

- N. (1) How many pints are there in 36 galls. 3 qts. 1 pt.?
 (2) Reduce 25,386 gills to pecks, &c.
 (3) Bring 8 loads 7 bus. 1 gall. to pints.
 (4) In 123,456 quarts, how many loads?
 (5) Reduce 10 loads 3 pecks 3 quarts to gills.
 (6) Bring 647,265 pints to loads.

WINE.

O. Reduce

- (1) 35 ankers to gallons
- (2) 63 runlets to gallons
- (3) 59 tierces to quarts
- (4) 83 puncheons to pints
- (5) 51 puncheons to gills
- (6) 87 hogsheads to gills

P. Reduce

- (1) 183 pipes to quarts
- (2) 197 tuns to pints
- (3) 2,834 pints to pipes
- (4) 3,899 quarts to tuns
- (5) 8,327 gills to tuns
- (6) 9,836 pints to hogsheads

ALE AND BEER.

Q. Reduce

- (1) 50 firkins to pints
- (2) 12 kilderkins to gills
- (3) 20 kilderkins to gills
- (4) 44 barrels to quarts
- (5) 50 hogsheads to pints
- (6) 12 butts to quarts

R. Reduce

- (1) 32,846 quarts to kilderkins
- (2) 47,025 pints to hogsheads
- (3) 53,278 gills to barrels
- (4) 63,329 gallons to butts
- (5) 72,014 gills to firkins
- (6) 86,388 pints to kilderkins

TROY WEIGHT.

S. Reduce	T. Reduce	U. Reduce
(1) 42 dwts. to grs.	(1) 267 grs. to dwts.	(1) 12 lbs. 10 oz. to dwts.
(2) 37 oz. to grs.	(2) 3,140 grs. to oz.	(2) 13 lbs. 19 dwts. to grs.
(3) 53 oz. to grs.	(3) 4,208 grs. to oz.	(3) 52 lbs. 22 grs. to grs.
(4) 60 lbs. to dwts.	(4) 2,680 dwts. to lbs.	(4) 28,345 grs. to lbs.
(5) 75 lbs. to grs.	(5) 5,058 grs. to oz.	(5) 49,286 grains to lbs.
(6) 89 lbs. to grs.	(6) 6,329 grs. to lbs.	(6) 50,189 grains to lbs.

APOTHECARIES' WEIGHT.

V. Reduce	W. Reduce	X. Reduce
(1) 10 scr. to grs.	(1) 325 grs. to scr.	(1) 11 lbs. 2 scr. to grs.
(2) 13 drs. to grs.	(2) 1,003 grs. to drs.	(2) 13 lbs. 7 drs. to scr.
(3) 25 oz. to drs.	(3) 2,220 grs. to oz.	(3) 12,870 grs. to lbs.
(4) 40 oz. to grs.	(4) 3,054 grs. to oz.	(4) 15 lbs. 19 grs. to grs.
(5) 18 lbs. to grs.	(5) 1,624 scr. to lbs.	(5) 32,508 scr. to lbs.
(6) 27 lbs. to grs.	(6) 5,268 grs. to oz.	(6) 27 lbs. 2 scr. to grs.

PAPER.

Y. Reduce	Z. Reduce
(1) 3 quires to sheets	(1) 2,546 sheets to quires
(2) 17 quires to sheets	(2) 7,029 sheets to reams
(3) 20 reams to sheets	(3) 29 reams 16 quires 20 sheets to sheets
(4) $1\frac{1}{2}$ reams to sheets	(4) 56 reams 13 quires 22 sheets to sheets
(5) $4\frac{1}{2}$ reams to sheets	(5) 1,286,297 sheets to quires
(6) $10\frac{1}{2}$ reams to quires	(6) 89 reams 19 quires 23 sheets to sheets

EXAMINATIONS IN REDUCTION (WEIGHTS AND MEASURES).

Ex. 52.

1. (1) How many pounds are there in two hundred and a half tons?
- (2) Reduce 6,280,146 sq. ft. to ac., ro., po., &c.
- (3) How many $\frac{1}{4}$ -lb. packages can be made out of two parcels, one containing half-a-cwt., and the other a quarter of a cwt.?
- (4) Bring 252 English ells to French ells.

86 EXAMS. IN REDUCTION (MEASURES AND WEIGHTS).

- B.** (1) Find the tons, cwts., qrs., and lbs. in 17,849,247 lbs.
 (2) How many square yards are there in a field of 17 acres 3 roods 16 poles.
 (3) Reduce 99 cub. yds. 1,054 cub. in. to cubic inches.
 (4) How many pounds (troy) are there in half-a-million grains?
- C.** (1) Reduce a mile and a quarter to feet.
 (2) How many more seconds in March than April?
 (3) Reduce 3,744,576 inches to *miles, furlongs, and yds.*
 (4) A mail bag contains 15,027 letters, each weighing on an average $\frac{1}{2}$ oz. Find the weight of the bag.
- D.** (1) Reduce ten and a half reams of paper to sheets.
 (2) Find the number of days, hours, minutes, and seconds in 1,213,459 seconds.
 (3) How many square yards, feet, and inches in ten thousand square inches?
 (4) How many seconds has a boy lived who is five years old?
- E.** (1) Bring eight million drams to tons.
 (2) Reduce 3 roods 36 po. $22\frac{1}{2}$ square yards 5 square feet, to square inches.
 (3) Reduce one hundred and eighty-two thousand two hundred and fourteen inches, to miles.
 (4) How many parcels, each weighing 2 lbs. 6 oz., can be made from a chest containing 2 qrs. 17 lbs. 10 ounces?
- F.** (1) Reduce twelve hundredweights two quarters seven pounds twelve ounces, to ounces.
 (2) Reduce 10,000 square yards to acres, roods, and perches.
 (3) In four million seconds, how many weeks, days, hrs., &c.?
 (4) What quantity of soap would be required for making up twelve thousand and twenty *half-pound* packages?
- G.** (1) Bring 51 sq. po. 4 sq. yds. 68 sq. in. to square inches.
 (2) How many *tons, cwts., &c.*, are there in six hundred and fifty-two thousand four hundred and three ounces?
 (3) In 208 miles 3 furlongs 6 poles 3 yards 2 feet, how many inches?
 (4) Show that 144 lbs. avoirdupois are equal to 175 lbs. troy.

- II.** (1) How many pints are there in half-a-tun of wine?
 (2) Find the number of tons, cwts., &c., in seventy-six thousand four hundred and nine ounces (avoirdupois).
 (3) In nine million six hundred and eighty-five thousand four hundred and ten seconds, how many months, weeks, days, &c.?
 (4) How many turns does a hoop 2 yards 16 inches in circumference, make in a quarter of a mile?
- I.** (1) Reduce 57 acres 3 roods 39 poles, to square yards.
 (2) In three hundred and forty-one thousand six hundred and eight pounds, how many tons, &c.?
 (3) Reduce 17 cubic yards 1,001 cubic inches, to cubic inches.
 (4) How many 9-oz. packets of tea are there in 40 chests, each containing $24\frac{1}{2}$ lbs.?
- J.** (1) Bring 2 tons 3 cwts. 1 qr. 17 lbs. 1 oz. to ounces.
 (2) How many *days*, *hours*, and *minutes* in five hundred and five thousand six hundred and eighty seconds?
 (3) Reduce 20 tons 15 cwts. 1 oz., to ounces.
 (4) How many minutes are there in the month of October?
- K.** (1) Bring 91,647,189 ounces to tons, cwts., grs., lbs., &c.
 (2) Reduce twenty-four hogsheads of wine to *half-pints*.
 (3) What is the difference, in *square yards*, between 1 square mile and 320 acres?
 (4) How many tablespoons, each weighing 2 oz., 17 dwts., 13 grs., can be made from 155 oz., 5 dwts., of silver?
- L.** (1) Find the number of years, days, hours, &c., in 45,000,724 seconds, calculating 365 days to a year.
 (2) Express 864,275 inches in miles, furlongs, poles, &c.
 (3) How many minutes are there in leap year?
 (4) How many cwts. are there in a cubic yard of water, when a cubic foot weighs one thousand ounces?
- M.** (1) Reduce to inches, 3 miles, 28 yards, 2 feet.
 (2) Express 2,467 square chains as acres, roods, and poles.
 (3) Change 3 qrs. 14 lbs., 8 oz., avoirdupois, into troy weight.
 (4) How many garden plots, each 3 roods 23 poles, can be made from a piece of land measuring 31 acres 1 rood 5 poles?

ADDITION OF WEIGHTS AND MEASURES.

Ex. 53.

A. (1)			(2)			(3)			(4)		
tons	cwts.	qrs.	cwts.	qrs.	lbs.	lbs.	oz.	drs.	tons	cwts.	lbs.
36	18	2	16	0	20	16	15	10	27	18	31
19	17	3	14	2	23	23	13	15	64	17	106
48	6	1	15	1	25	18	12	14	39	19	73
27	19	0	19	3	26	32	10	13	50	16	29
64	15	2	18	3	27	15	14	15	38	19	108

B. (1)			(2)			(3)			(4)		
lbs.	oz.	dwts.	oz.	dwts.	grs.	oz.	drs.	scr.	days	hrs.	m.
27	8	16	2	18	20	2	7	1	8	13	50
13	9	17	1	13	16	1	4	2	7	15	47
47	10	18	3	19	22	3	5	2	10	20	52
86	11	13		16	19	1	6	0	16	22	38
75	7	19	1	18	23	2	5	2	30	23	55

C. (1)			(2)			(3)			(4)		
wks.	days	hrs.	yrs.	days	hrs.	yrs.	mo.	wks.	yrs.	wks.	days
14	6	18	4	108	8	2	10	1	5	40	4
15	3	20	2	237	16	3	11	3	3	37	5
26	5	17	6	305	22	5	9	2	4	51	6
38	0	19	5	173	23	1	8	3	2	29	3
17	4	23	9	200	9	2	7	1	6	18	2

D. (1)			(2)			(3)			(4)		
qrs.	nls.	in.	yds.	qrs.	nls.	Eng. ell.	qrs.	nls.	yds.	ft.	in.
1	0	1	15	3	2	6	2	1	10	0	8
	2	1½	60	2	3	7	4	2	27	1	10
1	0	2	96	1	0	9	3	0	6	2	9
2	3	1½	20	2	3	8	0	3	39	0	11
3	1	1½	58	0	2	6	4	2	18	1	7

E. (1)			(2)			(3)			(4)		
fur.	po.	yds.	miles	fur.	po.	leag.	miles	fur.	miles	yds.	ft.
3	16	4	30	5	36	5	2	7	7	68	2
6	15	2½	28	2	37	4	0	2	2	189	0
7	20	3½	17	6	39	9	2	5	3	807	1
8	36	5	51	7	23	8	1	6	9	1,325	1
9	39	4½	46	3	35	1	2	4	4	999	2

F.	(1)			(2)			(3)			(4)		
	po.	yds.	in.	sq.yd.	sq.ft.	sq.in.	sq.yd.	sq.ft.	s.in.	ro.	po.	sq.yd.
6	31	27		36	7	105	29	6	125	2	32	261
5	4	32		27	2	133	37	7	136	3	16	19
7	5	30		15	6	140	43	5	142	4	19	27
4	4	29		41	5	87	50	6	119	2	25	30
3	3	27		19	4	128	18	8	107	6	10	29

G.	(1)			(2)			(3)			(4)		
	ac.	ro.	po.	ac.	sq.yd.	sq.ft.	sq.m.	ac.	ro.	ro.	po.	sq.yd.
25	2	35		1	2,367	7	1	560	2	2	38	30
16	0	28		2	3,406	4	3	287	1	1	29	29
30	1	39		1	1,238	8	4	638	3	6	15	10
57	8	16		4	4,750	5	2	456	2	8	37	28
43	2	33		2	2,983	6	1	389	2	5	28	18

H.	(1)			(2)			(3)			(4)		
	c.yd.	c.ft.	c.in.	c.yd.	c.ft.	c.in.	qt.	pt.	gills	gall.	qt.	pt.
2	15	87		3	20	1,264	2	1	1	1	2	1
3	26	98		8	16	1,534	1	0	0	4	3	0
4	10	380		2	22	1,680	3	1	3	2	3	1
1	24	936		4	25	1,754	2	1	2	3	0	1
5	18	1,029		9	19	1,095	4	0	2	6	2	0

I.	(1)			(2)			(3)			(4)		
	bus.	pt.	gall.	ld.	qr.	bus.	punc.	gall.	qts.	tuns	gall.	qts.
6	3	1		2	4	7	3	70	2	3	106	1
2	3	1		4	2	6	2	25	3	2	250	2
3	0	0		6	0	2	5	82	0	4	183	3
1	2	1		8	1	5	9	66	2	5	246	3
4	3	1		5	3	7	6	49	2	6	195	2

J.	(1)			(2)			(3)			(4)		
	kldn.	gall.	qt.	bar.	gall.	qt.	rms.	qrs.	shts.	rms.	qrs.	shts.
4	16	1		2	30	3	2	10	22	13	19	16
2	15	0		3	29	0	10	15	18	22	18	18
6	10	3		1	34	2	9	18	17	16	17	22
3	17	2		4	26	1	4	13	16	39	16	23
8	14	3		9	35	3	12	12	23	44	15	20

SUBTRACTION OF WEIGHTS AND MEASURES.

Ex. 54.

A. (1)			(2)			(3)			(4)		
tons	cwts.	qrs.	cwts.	qrs.	lbs.	qrs.	lbs.	oz.	lbs.	oz.	dra.
30	14	2	16	0	15	3	15	10	20	10	14
10	16	1	9	1	20	1	25	10	16	9	15
B. (1)			(2)			(3)			(4)		
lbs.	oz.	dwt.	oz.	dwt.	grs.	oz.	drs.	scr.	oz.	drs.	scr.
6	5	16	5	15	20	10	5	1	5	7	0
2	4	18	2	4	22	2	6	2	4	6	2
C. (1)			(2)			(3)			(4)		
yrs.	mo.	wks.	yrs.	wks.	days	yrs.	days	hrs.	hrs.	min.	sec.
10	10	2	1	50	3	2	103	20	16	13	52
9	9	3		51	6	1	267	15	5	50	49
D. (1)			(2)			(3)			(4)		
lp.yr.	dys.	hrs.	qrs.	nls.	in.	yds.	qrs.	nls.	Fr.ell	qr.	nls.
1	305	22	1	3	0	4	0	3	2	2	1
	365	23	1	0	1½	2	1	2	1	5	0
E. (1)			(2)			(3)			(4)		
yds.	ft.	in.	po.	yds.	ft.	fur.	po.	yds.	miles	fur.	po.
4	0	6	27	2½	1	6	32	4	10	0	32
2	2	6	16	1½	2	3	19	3½	5	7	38
F. (1)			(2)			(3)			(4)		
leag.	ml.	fur.	ml.	yds.	ft.	po.	yds.	ft.	fur.	po.	yds.
2	0	4	6	100	0	30	4½	0	5	29	3
1	0	6	2	1,001	1	19	5½	2		28	4½
G. (1)			(2)			(3)			(4)		
po.	yd.	in.	sq.yd.	sq.ft.	sq.in.	sq.yd.	sq.ft.	sq.in.	ro.	po.	sq.yd.
10	0	10	12	3	67	27	6	100	1	19	27
6	0½	32	9	2	109	26	5	140		19	30
H. (1)			(2)			(3)			(4)		
ro.	po.	sq.yd.	ac.	ro.	po.	ac.	sq.yd.	sq.ft.	sq.m.	ac.	ro.
3	30	20½	4	0	16	7	2,054	7	3	507	2
2	33	26½	1	0	32	2	3,509	7	1	628	3

I.	(1)			(2)			(3)			(4)		
	c.yd.	c.ft.	c.in.	c.yd.	c.ft.	c.in.	c.yd.	c.ft.	c.in.	c.yd.	c.ft.	c.in.
	6	10	83	8	0	27	8	1	827	12	16	1,205
	2	9	90	1	0	1,000	7	25	198	11	20	1,505

J.	(1)			(2)			(3)			(4)		
	qt.	pt.	gills	gall.	qt.	pt.	pk.	gall.	qt.	bus.	pk.	gall.
	2	0	1	3	3	0	3	0	3	3	0	0
	1	1	2	2	2	1	2	1	0	1	0	1

K.	(1)			(2)			(3)			(4)		
	qr.	bus.	pk.	ld.	qr.	bus.	ank.	gall.	qt.	punc.	gall.	qt.
	2	0	8	6	0	5	2	3	1	12	60	0
	1	5	3	1	4	7	1	8	8	10	75	2

L.	(1)			(2)			(3)			(4)		
	pipes	gall.	qt.	fir.	gall.	qt.	bar.	gall.	qt.	cen.	yrs.	days
	5	100	3	8	0	0	18	15	3	4	15	126
	2	120	3	3	8	1	9	27	0	1	90	287

M.	(1)			(2)			(3)			(4)		
	rms.	qrs.	shts.	rms.	qrs.	shts.	rms.	qrs.	shts.	rms.	qrs.	shts.
	10	10	10	7	0	23	14	19	0	1	10	20
	3	9	20	6	10	13	12	13	20		19	21

- N. (1) From 8 tons 1 qr. 17 lbs., take 5 tons 15 cwts. 3 qrs. 10 oz.
 (2) Subtract 17 cwts. 3 qrs. 27 lbs. 14 drs., from a ton.
 (3) Take 80 cub. yds. 25 cub. ft. 1,280 cub. in., from 100 cub. yds. 1 cub. ft.
 (4) From 1 ac. 30 po. 26 yds., take 2 ro. 27 po. 30 yds. 2 ft.

- O. (1) Subtract from 2 yds. 1 qr. $1\frac{1}{2}$ in., a yard and a half.
 (2) From 7 miles 1,010 yds., take 4 miles 1,620 yds. 2 ft.
 (3) From a hogshead of wine, take 29 galls. 2 qts. 1 pt.
 (4) Subtract 2 reams 17 qrs. 20 sheets, from rms. 10 qrs.

- P. (1) Subtract 4 qrs. 2 nls. 2 in., from a French ell.
 (2) From 12 cen. 18 yrs. 200 days, take 5 cen. 90 years 300 days.
 (3) Take 2 lb. 10 oz. 7 dr. 2 scr., from 5 lbs. 2 scr. 18 grs.
 (4) Subtract 10 lbs. 11 oz. 18 dwts. 20 grains, from 12 lbs. 19 dwts. 16 grains.

MULTIPLICATION OF WEIGHTS AND MEASURES.

Ex. 55.

A. (1)	5 tons 16 cwt. 2 qrs. 17 lbs.	× 5,	13,	46,	205
(2)	7 cwt. 3 qrs. 26 lbs. 10 oz.	× 6,	21,	43,	105
(3)	6 cwt. 89 lbs. 15 oz. 13 drs.	× 7,	19,	52,	320
(4)	2 lbs. 8 oz. 18 dwts. 14 grs.	× 8,	27,	47,	124
B. (1)	13 lbs. 5 oz. 19 dwts. 21 grs.	× 9,	23,	58,	300
(2)	20 lbs. 10 oz. 6 drs. 1 scr.	× 10,	26,	43,	401
(3)	1 lb. 9 oz. 7 drs. 2 scr. 10 grs.	× 11,	29,	62,	136
(4)	14 lbs. 6 oz. 4 drs. 1 scr. 19 grs.	× 7,	57,	85,	513
C. (1)	14 years 3 months 2 weeks 5 days	× 12,	65,	71,	250
(2)	10 days 13 hours 45 min. 20 sec.	× 4,	17,	78,	503
(3)	6 years 43 weeks 6 days 22 hours	× 3,	22,	67,	432
(4)	12 years 120 days 14 hours 50 min.	× 2,	37,	69,	620
D. (1)	4 yards 2 quarters 3 nails $1\frac{1}{2}$ inch	× 6,	68,	83,	176
(2)	2 English ells 4 qrs. 1 nail 2 inches	× 10,	56,	75,	237
(3)	20 poles 3 yards 2 feet 10 inches	× 11,	86,	94,	109
(4)	1 mile 6 furlongs 30 poles $4\frac{1}{2}$ yards	× 12,	49,	97,	365
E. (1)	16 leagues 2 miles 7 fur. 36 poles	× 16,	62,	95,	218
(2)	4 sq. po. $26\frac{1}{2}$ sq. yds. 6 sq. ft. 16 sq. in.	× 32,	93,	89,	477
(3)	50 ac. 3 ro. 27 po. $29\frac{1}{2}$ sq. yds.	× 40,	96,	98,	600
(4)	2 cub. yds. 20 cub. ft. 12 cub. in.	× 54,	65,	99,	328
F. (1)	14 cub. yds. 24 cub. ft. 368 cub. in.	× 60,	76,	88,	534
(2)	2 pecks 1 gallon 3 quarts 1 pint	× 84,	105,	128,	456
(3)	10 qrs. 7 bus. 3 pecks 1 gall.	× 77,	129,	230,	501
(4)	24 loads 4 qrs. 6 bus. 2 pecks	× 90,	132,	170,	390
G. (1)	5 puncheons 73 galls. 3 quarts 1 pt.	× 89,	125,	208,	787
(2)	8 barrels 32 galls. 2 quarts 1 pint	× 47,	203,	520,	469
(3)	6 reams 18 quires 20 sheets	× 57,	104,	239,	843
(4)	12 reams 19 quires 23 sheets	× 65,	118,	307,	594
H. (1)	25 tons 10 cwt. 2 qrs. 24 lbs.	× 384,	527,	1,208,	2,009
(2)	18 lbs. 6 oz. 10 dwts. 10 grs.	× 500,	283,	1,370,	5,060
(3)	10 lbs. 7 oz. 6 drs. 1 scr.	× 404,	375,	2,005,	4,234
(4)	15 cub. yds. 20 cub. ft. 804 cub. in.	× 303,	746,	3,095,	8,766

DIVISION OF WEIGHTS AND MEASURES.

Ex. 56.

A. (1)	820 tons 10 cwt. 1 qr. 24 lbs.	÷ 3, 14, 23, 840
(2)	49 cwt. 2 qrs. 10 lbs. 14 ozs.	÷ 4, 15, 31, 228
(3)	1 qr. 27 lbs. 12 ozs. 10 drs.	÷ 5, 16, 34, 407
(4)	329 lbs. 11 ozs. 18 dwts. 22 grs.	÷ 6, 18, 17, 182
B. (1)	750 lbs. 2 ozs. 5 dwts. 18 grs.	÷ 7, 20, 19, 351
(2)	209 lbs. 10 ozs. 7 drs. 2 scr.	÷ 8, 21, 52, 500
(3)	108 ozs. 2 drs. 1 scr. 18 grs.	÷ 9, 22, 37, 425
(4)	50 lbs. 7 drs. 2 scr. 16 grs.	÷ 10, 24, 53, 276
C. (1)	301 years 10 months 6 weeks 4 days	÷ 11, 25, 62, 188
(2)	1,008 days 22 hours 50 min. 5 sec.	÷ 12, 27, 65, 354
(3)	50 years 40 weeks 6 days 20 hours	÷ 2, 28, 67, 295
(4)	29 years 208 days 5 hours 40 min.	÷ 3, 30, 68, 387
D. (1)	250 yds. 1 qr. 3 nls. 1 in.	÷ 4, 32, 69, 191
(2)	208 Fr. ells 4 qrs. 1 nl. 2 in.	÷ 5, 33, 71, 456
(3)	612 poles $3\frac{1}{2}$ yards 1 foot 8 in.	÷ 6, 35, 72, 508
(4)	20 miles 7 furlongs 26 poles 5 yards	÷ 7, 36, 73, 547
E. (1)	394 leagues 1 mile 2 furlongs 30 poles	÷ 8, 40, 38, 159
(2)	40 sq. po. 30 sq. yd. 8 sq. ft. 101 sq. in.	÷ 9, 42, 39, 358
(3)	258 acres 2 roods 36 poles $25\frac{3}{4}$ sq. yds.	÷ 10, 44, 43, 470
(4)	818 cub. yds. 20 cub. ft. 1080 cub. in.	÷ 11, 45, 46, 383
F. (1)	1,200 cub. yds. 16 cub. ft. 59 cub. in.	÷ 12, 48, 57, 239
(2)	100 pecks 1 gall. 2 quarts 1 pint	÷ 11, 49, 58, 577
(3)	87 qrs. 6 bus. 2 pks. 1 gall.	÷ 10, 50, 59, 486
(4)	293 lds. 2 qrs. 7 bus. 1 peck	÷ 9, 54, 75, 595
G. (1)	20 punc. 80 gall. 2 quarts 1 pint	÷ 8, 55, 76, 397
(2)	104 bar. 33 gall. 1 quart 1 pint	÷ 7, 56, 78, 808
(3)	1,309 reams 14 quires 20 sheets	÷ 6, 60, 79, 921
(4)	2,085 reams 15 quires 23 sheets	÷ 5, 63, 83, 776
H. (1)	1,089 tons 10 cwt. 1 qr. 25 lbs.	÷ 4, 64, 85, 784
(2)	2,568 lbs. 11 oz. 18 dwts. 20 grs.	÷ 3, 66, 86, 589
(3)	5,234 lbs. 8 oz. 7 drs. 2 scr.	÷ 2, 70, 87, 888
(4)	9,261 cub. yds. 24 cub. ft. 1,204 cub. in.	÷ 9, 77, 89, 999

EXAMINATIONS IN WEIGHTS AND MEASURES.

Ex. 57.

- A.** (1) Subtract 156 miles 4 fur. 216 yards, from 191 miles 2 fur. 2 yards.
- (2) Multiply 18 tons 3 cwt. 2 qrs. 9 oz., by twenty-three.
- (3) A boy working a sum gave for the answer 4,624 acres 1 rood $18\frac{1}{2}$ poles; but the correct answer was 3,946 acres 3 roods $28\frac{1}{2}$ poles. What error did he make?
- (4) How many coins, each weighing 1 oz. 8 dwts., can be made out of a bar of metal which weighs 100 oz. 16 dwts?
- B.** (1) Find the forty-eighth part of 18 tons 3 cwt. 7 lbs. 5 oz.
- (2) From the sum of 41 acres 2 roods 17 poles 14 sq. yds., 27 acres 1 rood 31 poles 27 sq. yds., and 53 acres 3 roods 23 poles 18 sq. yds., take 22 acres 35 poles.
- (3) What is the total weight of 29 parcels, if the average weight of each is 3 cwt. 3 qrs. 14 lbs.?
- (4) What length of carpet three feet wide will it take to cover a room fifteen feet long and twelve feet broad?
- C.** (1) Multiply 5 acres 2 roods 13 poles, by seven hundred and fifty-nine.
- (2) From thirteen and a half acres, take thirty-two thousand six hundred and seventy square yards; and give the answer in acres
- (3) The circumference of a carriage wheel is 7 feet 4 inches. How often does it turn round in running a league?
- (4) If forty pounds (troy) of standard gold is coined into 1,869 sovereigns, find the exact weight of a sovereign.
- D.** (1) Divide 69 miles 7 furlongs 39 poles 2 feet, by 492.
- (2) How often is 1 ton 12 cwt. 2 qrs. 25 lbs. contained in 57 tons 3 cwt. 1 qr. 7 lb.?
- (3) A pint contains $34\frac{3}{4}$ cubic inches. How many pints are there in a cubic foot?
- (4) A lake which covers a space of one square mile in extent, is drained and converted into farm land. After reserving 9 acres 1 rood for roads, the remainder is equally divided among twelve farmers. How much does each receive?

- M.** (1) How many square inches are there in 9 ac. 1 ro. 20 po.?
 (2) The total weight of 617 parcels is 12 cwt. 5 lbs. 11 oz.: find the average weight of each.
 (3) Divide 26 lbs. 1 oz. 8 dwts. 19 grs., by 3 lbs. 8 oz. 15 dwts. 13 grs.
 (4) If a collier gets 13 tons 10 cwt. of coals in a day, what weight would he get in four days. Give the answer in *pounds*.
- F.** (1) Reduce two millions three hundred and fifty thousand and eighty grains, to pounds (troy).
 (2) Multiply 1 ac. 1 ro. 1 po. 1 sq. yd. 1 sq. ft. 1 sq. in., by 80.
 (3) Find the seventy-seventh part of 18 cwt. 101 lbs. 8 oz.
 (4) If a brick measures 8 in. by 4 in. by $2\frac{1}{2}$ in., how many are there in a stack 24 ft. long, 6 ft. wide, and 5 ft. high?
- G.** (1) Find the weight of 229 casks of sugar, each weighing 4 cwt. 27 lbs.
 (2) The driving wheel of a locomotive is 20 ft. in circumference. How many revolutions does it make per minute if the train travels at the rate of 30 miles per hour?
 (3) Divide an acre of land into twenty-two gardens of equal size.
 (4) In a piece of cloth there were 1,830 yds., and in another piece 5,212 nails. How much more was there in one than the other?
- H.** (1) How many pints of beer are there in a thousand barrels?
 (2) If a wheel makes 1,826 revolutions in 2 miles 4,961 feet, what is its circumference?
 (3) A grocer had a ham weighing $28\frac{1}{2}$ lbs. He cut off $13\frac{1}{2}$ lbs. for one customer, and nine pounds for another. How much had he left?
 (4) Bow bells weigh respectively,—2 tons 13 cwt. 25 lbs., 1 ton 14 cwt. 2 qrs. 6 lbs., 1 ton 6 cwt. 13 lbs., 1 ton 1 cwt. 23 lbs., 16 cwt. 4 lbs., 13 cwt. 2 qrs. 22 lbs., 12 cwt. 7 lbs., 10 cwt., 9 cwt. 1 qr. 5 lbs., and 8 cwt. 3 qrs. 7 lbs. Find their average weight.
- I.** (1) Multiply eighteen years thirty-nine weeks and six days, by five hundred and four.
 (2) What is the difference between two tons, and eight hundred-weights fourteen pounds?
 (3) If a butcher weighs six times less than a bullock, and both together weigh eight hundred and forty pounds, what is the weight of the bullock?
 (4) A loaded truck weighs 6 tons 4 cwt. 20 lbs.; the truck itself weighs $1\frac{1}{2}$ tons. How many packages each weighing $6\frac{1}{2}$ lbs. does the truck contain?

- J. (1) Reduce thirteen millions seventeen thousand and ten drams, to *tons, cwt.*, *qrs.*, &c.
 (2) Multiply 9 lbs. 14 dwts. 28 grs., by 960.
 (3) What is the length of a chain which is as long as the fifty-fourth part of 175 miles 4 furlongs?
 (4) 2 tons 14 cwt. of biscuit had to serve a ship's company of 96 men a fortnight. What was each man's share per day?
- K. (1) Subtract 3 cubic yards 1,082 cubic inches, from 190 cubic yards 21 cubic feet.
 (2) Add together the *sum* and *difference* of 10,000 pecks 1 gall., and 500 bushels 3 quarts. Give the answer in *pints*, and write it in words.
 (3) Multiply 56 tons 19 cwt. 108 lbs. 13 oz., by 105.
 (4) A truck is loaded with 120 sacks; each sack weighs 7 lbs. 10 oz., and contains 84 lbs. of grain. What is the weight of the whole load in tons, cwt., qrs., lbs.?
- L. (1) Divide 610,000 cub. yds. 25 cub. ft. 1,076 cub. in., by 390.
 (2) How much heavier are 7 spoons, each 7 oz. 1 dwt. 23 grs., than 13 spoons, each 2 oz. 8 dwts. 14 grs.?
 (3) Multiply 25 cen. 87 yrs. 243 days 20 hours, by 93.
 (4) A tailor used 327 yards of cloth in making 50 suits, each 5 yards 2 qrs.; and a number of coats, each 3 yds. 1 qr. Find how many coats he made.
- M. (1) What is the difference in *inches* between half a million feet, and three-quarters of a mile?
 (2) If a man takes one hundred steps a yard long in a minute, how many miles will he walk in three hours?
 (3) A piece of land measuring 869 roods 32 poles 16½ square yards, is divided among seven men. How many square yards will each receive?
 (4) Seven English ells three quarters two nails and three-quarters of an inch + four quarters two inches + one hundred and five English ells three nails and half an inch + one nail one and a quarter inches. Give the answer in *quarters*, and write it in words.
- N. (1) Reduce six hundred and seven thousand five hundred and forty-eight cubic inches, to cubic yards.
 (2) Divide twenty-seven million six hundred and eighty-five thousand eight hundred and eighty-three bushels two pecks one quart, by three hundred and ninety-five.
 (3) A yard stick is ¾ in. too short. If I buy 35 pieces of cloth each measuring twenty-five yards, how many *yards, quarters, nails, and inches*, do I lose?
 (4) A gentleman distributed twenty tubs of butter among two hundred and forty families. Eight tubs each contained 1 cwt. 38 lbs., and the rest 1 cwt. 48 lbs. How much did each family receive?

PRACTICE.

Ex. 58.Find the cost of the following articles at $\frac{1}{4}$ d. each.

A	B	C	D
(1) 100	(1) 302	(1) 507	(1) 215
(2) 120	(2) 226	(2) 283	(2) 473
(3) 202	(3) 404	(3) 470	(3) 602
(4) 244	(4) 810	(4) 625	(4) 537
(5) 208	(5) 118	(5) 707	(5) 419
(6) 300	(6) 431	(6) 580	(6) 811

Find the cost of the following articles at $\frac{1}{2}$ d. each.

E	F	G	H
(1) 268	(1) 371	(1) 1,204	(1) 2,736
(2) 136	(2) 428	(2) 2,013	(2) 4,560
(3) 305	(3) 519	(3) 1,508	(3) 5,101
(4) 420	(4) 280	(4) 3,106	(4) 3,258
(5) 272	(5) 705	(5) 4,272	(5) 7,545
(6) 157	(6) 896	(6) 8,158	(6) 2,971

Find the cost of the following articles at $\frac{3}{4}$ d. each.

I	J	K	L
(1) 204	(1) 328	(1) 4,204	(1) 3,257
(2) 152	(2) 153	(2) 2,072	(2) 1,208
(3) 320	(3) 207	(3) 5,123	(3) 6,732
(4) 484	(4) 532	(4) 3,265	(4) 4,567
(5) 528	(5) 471	(5) 1,538	(5) 3,253
(6) 244	(6) 175	(6) 6,246	(6) 9,121

E

- M** (1) Find the cost of 274 tops at $\frac{1}{4}d.$ each.
 (2) What are 1,020 apples worth at $\frac{1}{2}d.$ each?
 (3) Find the price of 2,900 oranges at $\frac{3}{4}d.$ each.
 (4) How much shall I have to pay for one thousand and seven pears at a farthing each?
- N** (1) Required, the cost of 2,767 articles at $\frac{1}{2}d.$ each.
 (2) I bought 7,014 things, and paid on an average a farthing each. How much did my bill amount to?
 (3) Find the price of 5,769 candles at a halfpenny each.
 (4) A shopkeeper sold three thousand articles at three-farthings each. What did he get for the lot?

Ex. 59.

Find the cost of the following articles.

A—a	b	c	d
at $1d.$	at $1\frac{1}{2}d.$	at $1\frac{1}{2}d.$	at $1\frac{1}{2}d.$
(1) 324	(1) 2,048	(1) 3,145	(1) 1,279
(2) 506	(2) 3,256	(2) 2,736	(2) 3,053
(3) 180	(3) 4,053	(3) 1,279	(3) 2,761
(4) 275	(4) 2,671	(4) 3,652	(4) 5,897
(5) 608	(5) 5,242	(5) 4,706	(5) 9,273
(6) 576	(6) 3,627	(6) 7,987	(6) 4,639

Find the cost of the following articles.

B—a	b	c	d
at $2d.$	at $2\frac{1}{2}d.$	at $2\frac{1}{2}d.$	at $2\frac{1}{2}d.$
(1) 5,326	(1) 1,372	(1) 5,367	(1) 2,738
(2) 2,738	(2) 2,548	(2) 2,754	(2) 5,251
(3) 4,207	(3) 3,635	(3) 1,835	(3) 7,008
(4) 1,524	(4) 6,329	(4) 7,219	(4) 4,105
(5) 3,011	(5) 5,277	(5) 4,538	(5) 3,759
(6) 4,939	(6) 8,356	(6) 3,171	(6) 1,887

Find the cost of the following articles.

C—a	b	c	d
at 3 <i>d</i> .	at 3½ <i>d</i> .	at 3½ <i>d</i> .	at 3½ <i>d</i> .
(1) 2,782	(1) 3,216	(1) 4,080	(1) 6,432
(2) 1,208	(2) 2,753	(2) 2,071	(2) 2,504
(3) 3,015	(3) 4,261	(3) 3,249	(3) 5,746
(4) 7,254	(4) 8,500	(4) 5,603	(4) 1,200
(5) 6,127	(5) 2,748	(5) 2,144	(5) 8,363
(6) 5,380	(6) 8,126	(6) 9,656	(6) 4,788

- D (1) What will 7,830 articles cost at 2½*d*. each?
 (2) Find the value of 3,071 brushes at threepence each.
 (3) Find the cost of 4,786 articles at 2½*d*. each.
 (4) If 4,786 people each give 3½*d*. at a collection, find the total sum received.

Find the cost of the following articles.

E—a	b	c	d
at 4 <i>d</i> .	at 4½ <i>d</i> .	at 4½ <i>d</i> .	at 4½ <i>d</i> .
(1) 1,416	(1) 1,968	(1) 2,472	(1) 4,944
(2) 2,004	(2) 3,034	(2) 1,208	(2) 5,263
(3) 3,213	(3) 4,226	(3) 7,064	(3) 7,750
(4) 5,422	(4) 2,782	(4) 3,273	(4) 1,234
(5) 2,637	(5) 5,140	(5) 2,656	(5) 6,838
(6) 1,578	(6) 6,325	(6) 8,329	(6) 9,262

- F (1) Find the value of 2,340 things at 3½*d*. each.
 (2) What will be the cost of 6,078 articles at 4½*d*. each?
 (3) Find, by Practice, how much money 5,002 times 4½*d*. is equal to.
 (4) What are 4,526 plants worth, if on an average they cost 4½*d*. each?

Find the cost of the following articles.

G—a	b	c	d
at 5 <i>d</i> .	at 5½ <i>d</i> .	at 5½ <i>d</i> .	at 5½ <i>d</i> .
(1) 2,784	(1) 9,936	(1) 4,968	(1) 8,400
(2) 3,346	(2) 2,745	(2) 7,232	(2) 9,208
(3) 7,258	(3) 3,863	(3) 6,404	(3) 6,732
(4) 6,830	(4) 5,574	(4) 1,230	(4) 4,251
(5) 4,654	(5) 2,839	(5) 8,759	(5) 1,708
(6) 2,902	(6) 6,452	(6) 5,673	(6) 3,296

Find the cost of the following articles.

H—a	b	c	d
at 6d.	at $6\frac{1}{2}$ d.	at $6\frac{1}{2}$ d.	at $6\frac{1}{2}$ d.
(1) 5,046	(1) 3,264	(1) 4,287	(1) 3,268
(2) 3,270	(2) 3,375	(2) 7,395	(2) 5,374
(3) 2,384	(3) 4,287	(3) 6,258	(3) 6,859
(4) 6,105	(4) 3,548	(4) 5,476	(4) 4,286
(5) 5,738	(5) 6,953	(5) 3,259	(5) 3,654
(6) 7,247	(6) 2,839	(6) 6,874	(6) 8,702

Find the cost of the following articles.

I—a	b	c	d
at 7d.	at $7\frac{1}{2}$ d.	at $7\frac{1}{2}$ d.	at $7\frac{1}{2}$ d.
(1) 8,329	(1) 5,326	(1) 2,838	(1) 5,375
(2) 4,756	(2) 4,789	(2) 7,265	(2) 2,938
(3) 3,231	(3) 3,258	(3) 4,908	(3) 7,510
(4) 1,250	(4) 6,397	(4) 9,321	(4) 8,769
(5) 5,384	(5) 2,864	(5) 5,107	(5) 3,207
(6) 6,637	(6) 5,746	(6) 6,382	(6) 5,496

Find the cost of the following articles.

J—a	b	c	d
at 8d.	at $8\frac{1}{2}$ d.	at $8\frac{1}{2}$ d.	at $8\frac{1}{2}$ d.
(1) 7,924	(1) 4,283	(1) 7,325	(1) 8,397
(2) 2,837	(2) 5,167	(2) 4,268	(2) 2,864
(3) 5,268	(3) 3,208	(3) 5,107	(3) 7,596
(4) 6,386	(4) 9,086	(4) 3,058	(4) 3,285
(5) 4,275	(5) 1,509	(5) 6,239	(5) 4,977
(6) 8,361	(6) 6,042	(6) 4,882	(6) 8,930

Find the cost of the following articles.

K—a	b	c	d
at 9d.	at $9\frac{1}{2}$ d.	at $9\frac{1}{2}$ d.	at $9\frac{1}{2}$ d.
(1) 8,109	(1) 2,358	(1) 5,328	(1) 3,386
(2) 2,073	(2) 6,289	(2) 2,796	(2) 9,270
(3) 3,286	(3) 5,473	(3) 3,511	(3) 5,804
(4) 5,358	(4) 9,107	(4) 1,280	(4) 6,003
(5) 6,234	(5) 6,238	(5) 7,985	(5) 4,389
(6) 1,728	(6) 4,720	(6) 8,259	(6) 9,765

PRACTICE.

Find the cost of the following articles.

L—a	b	c	d
at 10d.	at $10\frac{1}{2}$ d.	at $10\frac{1}{2}$ d.	at $10\frac{1}{2}$ d.
(1) 5,960	(1) 7,286	(1) 8,205	(1) 5,428
(2) 3,877	(2) 4,395	(2) 4,068	(2) 6,798
(3) 4,208	(3) 3,648	(3) 9,384	(3) 3,289
(4) 2,754	(4) 5,129	(4) 1,296	(4) 4,466
(5) 1,621	(5) 8,873	(5) 3,880	(5) 2,857
(6) 6,286	(6) 2,594	(6) 5,545	(6) 8,768

Find the cost of the following articles.

M—a	b	c	d
at 11d.	at $11\frac{1}{2}$ d.	at $11\frac{1}{2}$ d.	at $11\frac{1}{2}$ d.
(1) 5,286	(1) 3,887	(1) 8,896	(1) 3,759
(2) 7,364	(2) 4,756	(2) 7,679	(2) 4,865
(3) 6,875	(3) 2,975	(3) 5,438	(3) 8,988
(4) 4,269	(4) 8,589	(4) 9,642	(4) 9,543
(5) 8,753	(5) 6,874	(5) 8,700	(5) 6,486
(6) 3,947	(6) 9,288	(6) 5,348	(6) 7,875

- N (1) What must I give for 8,090 boxes at $6\frac{1}{2}$ d. each?
 (2) Find the value of 7,865 caps at $9\frac{3}{4}$ d. each.
 (3) How much are 4,806 pounds of butter worth at $10\frac{1}{2}$ d. per lb.?
 (4) Find the cost of 5,324 articles at $11\frac{1}{2}$ d. each.

Ex. 60.

Find the cost of the following articles.

A—a	b	c	d
at 1s.	at 1s. 1d.	at 1s. $1\frac{1}{2}$ d.	at 1s. $0\frac{1}{2}$ d.
(1) 2,588	(1) 3,728	(1) 2,014	(1) 5,328
(2) 5,402	(2) 5,208	(2) 8,547	(2) 4,705
(3) 3,376	(3) 6,354	(3) 1,683	(3) 2,584
(4) 4,859	(4) 8,640	(4) 2,759	(4) 3,653
(5) 1,235	(5) 3,521	(5) 7,365	(5) 1,479
(6) 6,477	(6) 4,729	(6) 9,238	(6) 8,036

Find the cost of the following articles.

B		C	
(1)	5,386 at 2s. 0 $\frac{1}{2}$ d. each	(1)	6,254 at 4s. 9 $\frac{1}{2}$ d. each
(2)	3,205 at 2s. 4 $\frac{1}{2}$ d. each	(2)	1,596 at 6s. 9 $\frac{1}{2}$ d. each
(3)	4,360 at 2s. 6d. each	(3)	2,830 at 8s. 10d. each
(4)	2,739 at 3s. 7 $\frac{1}{2}$ d. each	(4)	5,406 at 9s. 10 $\frac{1}{2}$ d. each
(5)	6,006 at 3s. 7 $\frac{1}{2}$ d. each	(5)	4,254 at 10s. 11 $\frac{1}{2}$ d. each
(6)	8,592 at 3s. 8 $\frac{1}{2}$ d. each	(6)	7,603 at 10s. 11 $\frac{1}{2}$ d. each

D		E	
(1)	2,847 at 11s. 4d. each	(1)	1,527 at 17s. 5 $\frac{1}{2}$ d. each
(2)	4,208 at 12s. 1 $\frac{1}{2}$ d. each	(2)	3,205 at 18s. 0 $\frac{1}{2}$ d. each
(3)	5,063 at 13s. 9 $\frac{1}{2}$ d. each	(3)	8,754 at 19s. 7 $\frac{1}{2}$ d. each
(4)	8,329 at 14s. 3 $\frac{1}{2}$ d. each	(4)	5,251 at 19s. 10 $\frac{1}{2}$ d. each
(5)	4,871 at 15s. 2d. each	(5)	7,632 at 19s. 11d. each
(6)	3,115 at 16s. 6 $\frac{1}{2}$ d. each	(6)	4,287 at 16s. 0 $\frac{1}{2}$ d. each

- F (1) What are 2,635 books worth at 17s. 6d. each?
 (2) Find the cost of 3,776 pounds of tea at 3s. 10 $\frac{1}{2}$ d. per lb.
 (3) What must I pay for 8,200 chairs if one cost 15s. 9d?
 (4) Find the value of 1,297 yards of silk at 12s. 11 $\frac{1}{2}$ d. per yard.

- G (1) Find the cost of 7,203 articles at 18s. 0 $\frac{1}{2}$ d. each.
 (2) Find the value of 5,189 baskets at 9s. 9 $\frac{1}{2}$ d. each.
 (3) How much are 2,002 turkeys worth at 10s. 6d. each.
 (4) Find the value of 6,328 tables at 19s. 1 $\frac{1}{2}$ d. each.

- H (1) Find, by Practice, 3,003 times 13s. 0 $\frac{1}{2}$ d.
 (2) Find the value of 4,875 coats at 18s. 11 $\frac{1}{2}$ d. each.
 (3) What are 5,206 desks worth at 15s. 8 $\frac{1}{2}$ d. each?
 (4) Find the cost of 8,729 maps at 17s. 10d. each.

Find the cost of the following articles, each at (a) 8s. 7 $\frac{1}{2}$ d.,
 (b) 13s. 6 $\frac{1}{2}$ d., (c) 14s. 0 $\frac{1}{2}$ d., and (d) 16s. 11 $\frac{1}{2}$ d.

I	J	K	L
(1) 4,728	(1) 7,237	(1) 1,237	(1) 3,247
(2) 7,354	(2) 5,509	(2) 3,015	(2) 5,286
(3) 5,201	(3) 3,870	(3) 7,870	(3) 1,784
(4) 4,093	(4) 1,283	(4) 6,298	(4) 2,986
(5) 3,627	(5) 2,906	(5) 5,106	(5) 6,108
(6) 1,509	(6) 8,057	(6) 8,087	(6) 7,571

Ex. 61.

Find the cost of the following articles.

A

- (1) 284 at £1 14s. 6d.
- (2) 320 at £1 13s. 7½d.
- (3) 408 at £1 15s. 8¾d.
- (4) 156 at £2 11s. 1d.
- (5) 680 at £2 5s. 9½d.
- (6) 423 at £2 7s. 3½d.

B

- (1) 528 at £3 12s. 2½d.
- (2) 296 at £4 11s. 0¾d.
- (3) 140 at £5 9s. 8d.
- (4) 859 at £6 13s. 4½d.
- (5) 603 at £7 2s. 6¾d.
- (6) 808 at £8 18s. 11d.

C

- (1) 2,520 at £12 4s. 9½d.
- (2) 1,316 at £15 2s. 10d.
- (3) 5,012 at £18 10s. 8¾d.
- (4) 2,637 at £19 19s. 2d.
- (5) 8,205 at £20 17s. 5½d.
- (6) 7,362 at £25 0s. 6½d.

D

- (1) 1,073 at £31 15s. 7¾d.
- (2) 5,287 at £54 18s. 0½d.
- (3) 2,354 at £83 0s. 4½d.
- (4) 3,880 at £49 11s. 11d.
- (5) 8,208 at £72 16s. 9½d.
- (6) 7,375 at £97 18s. 10½d.

E

- (1) 2,047 at £124 9s. 8¾d.
- (2) 3,875 at £207 13s. 9½d.
- (3) 1,008 at £370 0s. 6¾d.
- (4) 2,759 at £158 5s. 1½d.
- (5) 8,354 at £184 6s. 2½d.
- (6) 1,237 at £395 18s. 11d.

F

- (1) 5,286 at £504 17s. 0½d.
- (2) 3,007 at £470 16s. 4d.
- (3) 2,875 at £385 8s. 0¾d.
- (4) 8,059 at £709 0s. 1d.
- (5) 6,238 at £256 14s. 0½d.
- (6) 3,457 at £629 19s. 11¾d.

G

- (1) 360½ at £8 10s. 6d.
- (2) 426½ at £7 15s. 7d.
- (3) 537½ at £9 17s. 4½d.
- (4) 600½ at £6 0s. 8d.
- (5) 209½ at £10 10s. 10d.
- (6) 154¾ at £13 18s. 8d.

H

- (1) 580¾ at £18 19s. 8d.
- (2) 407½ at £21 18s. 9d.
- (3) 821½ at £24 12s. 7½d.
- (4) 735½ at £15 15s. 10d.
- (5) 868¾ at £30 18s. 10½d.
- (6) 250¼ at £35 15s. 8¾d.

I

- (1) 2,634¾ at £7 16s. 1½d.
- (2) 1,728⅞ at £13 17s. 0¾d.
- (3) 5,395⅞ at £20 10s. 8½d.
- (4) 9,209¼ at £18 15s. 9½d.
- (5) 8,350⅞ at £8 12s. 6d.
- (6) 2,707⅞ at £10 10s. 10½d.

J

- (1) 5,368⅞ at £25 14s. 8¾d.
- (2) 2,097⅞ at £17 18s. 9½d.
- (3) 1,572⅞ at £60 6s. 2d.
- (4) 6,204¼ at £100 0s. 9½d.
- (5) 2,349½ at £73 17s. 11d.
- (6) 4,370⅞ at £36 12s. 2¾d.

Ex. 62.

AVOIRDUPOIS WEIGHT.

Find the value of

A						B					
tons	cwt.	qrs.		s.	d.	cwt.	qrs.	lbs.		s.	d.
(1)	4	1	2	at	8 10	(1)	1	3	16	at	10 10 4
(2)	8	3	1	at	6 14	(2)	2	1	15	at	6 18 6
(3)	10	1	3	at	4 18	(3)	11	2	14	at	18 16 8
(4)	24	2	2	at	10 6	(4)	12	3	3	at	20 13 5
(5)	40	1	1	at	20 5	(5)	15	1	19	at	38 17 9
(6)	63	0	3	at	36 16	(6)	3	2	16	at	45 18 2

C						D					
qrs.	lbs.	oz.		s.	d.	lbs.	oz.	dms.		s.	d.
(1)	1	15	10	at	12 6 8	(1)	6	10	12	at	27 10 8
(2)	2	10	8	at	13 17 6	(2)	7	5	15	at	43 11 7
(3)	3	8	3	at	20 13 9	(3)	21	11	8	at	80 14 6
(4)	2	17	13	at	18 18 5	(4)	24	13	13	at	54 16 10
(5)	3	15	9	at	66 16 4	(5)	3	14	9	at	35 15 5
(6)	2	10	10	at	50 10 6	(6)	1	12	14	at	46 14 8

LONG MEASURE.

Find the value of

E							F						
leag.	mils.	fur.	po.	s.	d.		po.	yds.	ft.	in.	s.	d.	
(1)	4	1	5	20	at	10 12 0	(1)	4	0	1	6	at	7 6
(2)	2	2	4	26	at	15 7 6	(2)	18	0 1/2	0	4	at	8 10
(3)	1	1	7	16	at	20 0 10	(3)	2	4	2	7	at	10 5
(4)	7	0	6	18	at	12 13 8	(4)	25	2 1/2	1	11	at	24 8
(5)	1	1	2	3	at	13 12 11	(5)	3	2	2	10	at	3 3
(6)	18	2	5	36	at	14 18 9	(6)	37	2	0	8	at	16 16

- G (1) What will be the cost of 1 league 6 furlongs 30 poles at £12 per mile?
 (2) Find the value of 2 miles 7 fur. 11 po. at £10 10s. per fur.
 (3) Find the value of 1 mile 5 fur. 30 po. at £24 17s. per leag.
 (4) Find the value of 6 fur. 21 po. 1 ft. 11 in. at £2 per foot.

CLOTH MEASURE.

Find the value of

H						I					
yds.	qrs.	nls.	s.	a.	d.	yds.	qrs.	nls.	s.	a.	d.
(1)	2	1	3	at	1 0	(1)	1	yd.	2	nls.	at £2 per yd.
(2)	3	2	1	at	1 17 8	(2)	3	qrs.	at £1 10s. 6d.	per yd.	
(3)	4	3	3	at	1 15 6	(3)	9	yd.	3	qr.	1 nl. at £3 per yd.
(4)	2	2	2	at	2 1 0	(4)	1	qr.	2 nls.	1 in. at £2 10s. per Eng. ell	
(5)	0	2	3	at	0 18 10	(5)	8	yd.	1 qr.	2 nl. at £1 18s. 8d. per Flem. ell	
(6)	7	0	2	at	1 16 6	(6)	3	qr.	1 nl.	at £1 6s. 6d. per French ell	

(1) 1 yd. 2 nls. at £2 per yd.
 (2) 3 qrs. at £1 10s. 6d. per yd.
 (3) 9 yd. 3 qr. 1 nl. at £3 per yd.
 (4) 1 qr. 2 nls. 1 in. at £2 10s. per Eng. ell
 (5) 8 yd. 1 qr. 2 nl. at £1 18s. 8d. per Fm. ell
 (6) 3 qr. 1 nl. at £1 6s. 6d. per French ell

SQUARE MEASURE.

Find the value of

- J** (1) 3 acres 2 roods 10 poles at £40 15s. 8½d. per acre.
 (2) 13 acres 5 roods 17 poles at £56 14s. 9d. per acre.
 (3) 2 acres 1 rood 39 poles at £64 18s. 5d. per rood.
 (4) 14 sq. yds. 7 sq. ft. 48 sq. in. at £35 10s. 10d. per sq. yd.
 (5) 8 po. 26 sq. yd. 4 sq. ft. 77 sq. in. at £8 17s. 6½d. per sq. yd.
 (6) 3 roods 1 pole 2½ sq. yds. at £48 16s. 8½d. per acre.

CUBIC MEASURE.

Find the value of

- K** (1) 17 cub. yds. 4 cub. ft. 864 cub. in. at £12 12s. per cub. yd.
 (2) 39 cub. yds. 7 cub. ft. 416 cub. in. at £15 16s. 2d. per cub. yd.
 (3) 2 cub. yds. 11 cub. ft. 144 cub. in. at £7 10s. per cub. ft.
 (4) 26 cub. ft. 1,008 cub. in. at £20 18s. 4d. per cub. yd.
 (5) 1 cub. yd. 2 cub. ft. 208 cub. in. at 15s. per cub. in.
 (6) 43 cub. yds. 25 cub. ft. 1,600 cub. in. at £30 per cub. yd.

TIME.

Find the value of

- L** (1) 11 years 5 months 2 weeks at £260 per year.
 (2) 18 years 7 months 1 week at £150 6s. 6d. per year.
 (3) 4 years 2 months 3 weeks 1 day at £4 4s. per month.
 (4) 1 year 3 months 2 weeks 3 days at £1 17s. 6d. per week.
 (5) 6 months 1 week 6 days 13 hours at £100 per year.
 (6) 3 yrs. 3 mo. 14 days 23 hours at £350 10s. 6½d. per year.
- M** (1) What will 3 men earn in a fortnight (12 days) at 3s. 6d. per man per day?
 (2) A servant's wage was £12 per year. How much was due to her when she had been 3 months 2 weeks 2 days in her situation?
 (3) The rent of a house is twenty guineas per annum. Find the rent for 3 months.
 (4) A gentleman charged £5 for lending £100 a year. What would be his charge for lending the money on 7 mo. 3 wks. 1 day?

LIQUID MEASURE.

Find the value of

- N** (1) 3 galls. 1 qt. 1 pt. at £1 13s. 6d. per gallon.
 (2) 5 bus. 3 pks. 2 qts. 1 pt. at £6 18s. 4d. per bushel.
 (3) 2 qrs. 7 bus. 1 gall. at £10 10s. per bus.
 (4) 1 load 1 qr. 5 bus. 2 qts. 1 pt. at £15 per qr.
 (5) 1 qr. 4 bus. 2 pks. 1 qt. at £20 15s. 8d. per load.
 (6) 13 loads 5 bus. 2 qts. 2 gills at £36 per load.

PRACTICE.

WINE MEASURE.

Find the value of

- O (1) 4 tuns 1 pipe 1 hhd. at £150 10s. per tun.
 (2) 17 tuns 1 hhd. 8 runlets at £126 17s. 6d. per tun.
 (3) 3 hhds. 50 gallons at £200 12s. 7½d. per tun.
 (4) 10 hhds. 30½ galls. 8 qts. at £90 13s. 4d. per hhd.
 (5) 2 hhds. 43 galls. 2 qts. 1 pt. at £66 16s. 6d. per hhd.
 (6) 1 hhd. 15 galls. 2 pts. at £2 12s. 11d. per gallon,

ALE AND BEER MEASURE.

Find the value of

- P (1) 12 bar. 1 kil. 1 fir. at £2 12s. 6d. per barrel.
 (2) 18 hhd. 2 kil. 2 fir. at £8 15s. 10d. per hhd.
 (3) 10 kil. 1 fir. 7 galls. 8 qts. at one guinea per kil.
 (4) 3 fir. 5 galls. 1 pt. at 17s. 6d. per firkin.
 (5) 7 butts 1 hhd. 1 bar. 1 fir. at £18 18s. 3d. per butt.
 (6) 4 butts 2 bar. 2 fir. 6 galls. at £2 10s. per barrel.

TROY WEIGHT.

Find the value of

- Q (1) 28 lbs. 5 oz. 17 dwts. 20 grs. at £10 15s. 2d. per lb.
 (2) 75 lbs. 10 dwts. 11 grs. at £13 0s. 5½d. per lb.
 (3) 1 lb. 11 oz. 19 dwts. 23 grs. at £2 2s. 7d. per oz.
 (4) 10 oz. 17 dwts. 19 grs. at £11 11s. 11d. per lb.
 (5) 59 lbs. 8 oz. 8 dwts. 21 grs. at £9 17s. 6½d. per lb.
 (6) 127 lbs. 9 oz. 12 grs. at £8 18s. 1½d. per lb.

APOTHECARIES' WEIGHT.

Find the value of

- R (1) 13 lbs. 3 oz. 4 drs. at £1 0s. 6d. per lb.
 (2) 17 lbs. 7 oz. 7 drs. 1 scr. at 7s. 6d. per oz.
 (3) 5 oz. 6 drs. 2 scr. 12 grs. at £3 15s. 4d. per lb.
 (4) 9 lbs. 7 drs. 1 scr. 18 grs. at £2 17s. 9½d. per lb.
 (5) 58 lbs. 11 oz. 7 drs. 2 scr. 19 grs. at £4 14s. per lb.
 (6) 3 lbs. 3 oz. 6 drs. 17 grs. at 6d. per dram.

PAPER.

- S (1) What will 3 rms. 5 qrs. of paper cost at 12s. 6d. per ream?
 (2) Find the cost of 7 rms. 18 qrs. 12 shts. at 4d. per quire.
 (3) What must I give for 100 reams of paper at a farthing a sheet?
 (4) Find the value of 39 rms. 19 qrs. 23 shts. at £3 18s. 6d. per ream.

EXAMINATIONS IN PRACTICE.

Ex. 63.

- A (1) Find the cost of 289 articles at $15s. 7\frac{1}{2}d.$ each.
 (2) What is the worth of a bar of silver weighing half-a-pound at five shillings per ounce?
 (3) Find the value of $58\frac{1}{2}$ tons of coal at a guinea per ton.
 (4) Find the cost of $9,706\frac{1}{11}$ articles at $\pounds 2\ 4s. 3\frac{1}{2}d.$ each.
- B (1) What will a gross of boxes cost at $1s. 0\frac{3}{4}d.$ each.
 (2) Find the value of $83\frac{1}{16}$ lbs. at $15s. 2d.$ per lb.
 (3) Find the tax on a hundred guineas at threepence halfpenny in the pound.
 (4) Find the value of three thousand seven hundred and sixty acres of land at eighty pounds per rood.
- C (1) Find the value of $13\frac{1}{16}$ articles at $7s. 9\frac{1}{2}d.$ each.
 (2) Find the cost of eleven tons fourteen hundredweights at two pounds seventeen shillings and sixpence per hundredweight.
 (3) Find, by Practice, the value of $784\frac{1}{2}$ sheep at $\pounds 2\ 12s. 10d.$ each.
 (4) Find the cost of 14 yds. 3 qrs. 1 nl. of Genoa velvet at $27s. 4d.$ per yard.
- D (1) Required, the cost of a dozen and a half chairs at two and a half guineas each?
 (2) Find the cost of 7 lbs. 2 oz. 5 dwts. 4 grs. at $3s. 7\frac{1}{2}d.$ per dwt.
 (3) Find the rent of 50 acres 1 rood 10 perches at $\pounds 3\ 7s. 4d.$ per acre.
 (4) Calculate, by Practice, a servant's wages for five months three weeks six days at one pound seven shillings and fivepence per month (reckon 7 days in a week).
- E (1) What is the price of 9 cwts. 3 qrs. 14 lbs. of coal at $30s.$ per ton?
 (2) A person earns $\pounds 200$ a year, and pays an income-tax of $2d.$ in the pound. What is his net income?
 (3) Find the value of $343\frac{1}{2}$ things at $\pounds 2\ 16s. 10\frac{1}{2}d.$ each.
 (4) Find, by Practice, the rent of a farm containing 279 acres 3 roods 36 poles at $\pounds 2\ 11s. 8d.$ per acre.

- F** (1) What will seven thousand three hundred and thirty-nine pounds cost at £5 3s. 9d. per pound.
- (2) Find the value of 5 tons 19 cwt. 3 qrs. 24 lbs. at £5 13s. 11d. per cwt.
- (3) If soap is 39s. 4½d. a cwt., what will 2037½ cwt. cost?
- (4) Find, by Practice, the cost of apartments for 22 weeks 5½ days at £1 5s. 8d. per week (7 days in a week).
- G** (1) Find the value of a tankard which weighs 1 lb. 7 oz. 14 dwts. at six shillings an ounce.
- (2) Calculate the cost of 11,725½ things at £1 0s. 6½d. each.
- (3) What will three hundred and fifty-seven yards of silk cost at six shillings and ninepence three-farthings per yard?
- (4) Find, by Practice, the amount of an officer's salary for 317 days at £1 13s. 4½d. per day.
- H** (1) What is the rating on £316 at 2s. 8½d. in the £?
- (2) Required, the cost of 1275½ yards at 2s. 8½d. a yard.
- (3) Find the value of 42 loads 1 quarter 3 bushels at £2 14s. 8d. per quarter.
- (4) The expense of draining a district covering 9,264 acres 3 roods 34 poles came to £9 18s. 8d. per acre. Find, by Practice, the total expense.
- I** (1) Find the value of 21 tons 13 cwt. 21 lbs. at £2 17s. 6d. per cwt.
- (2) If a mason charged 11s. 8½d. per square yard for doing work, what would his bill for 43,781 square yards amount to?
- (3) Find the value of 2,705 oz. 13 dwts. 13 grs. of gold at £3 17s. 10½d. per ounce.
- (4) Find, by Practice, the cost of 78,956 articles at £9 7s. 8½d. per dozen.
- J** (1) Find the value of 3,061 cwt. 2 qrs. 15 lbs. at twenty guineas a ton.
- (2) Find, by Practice, the value of 2 roods 19 poles 12 yards of land at £80 13s. 4d. per acre.
- (3) Required, the value of 9,874⅔ things at 16s. 6d. each.
- (4) What will be the aggregate weight of 341 separate parcels, each of which weighs 1 qr. 7 lbs. 4 oz.? (Work this sum by Practice only.)

- K (1) Find the cost of 456 tons 11 cwt. at £1 4s. 8d. per cwt.
- (2) What sum will be produced by 6,527 payments, the average of each being 66s. 1½d.?
- (3) Calculate the cost of 16 cwt. 3 qrs. 13 lbs. at £32 13s. 4d. per ton.
- (4) Find the value of 18 yds. 3 qrs. 3½ nails at 10s. 6d. per yd.
- L (1) What is the cost of 3 lbs. 2 oz. 15 dwts. 18 grs. at £3 17s. 10½d. per ounce?
- (2) Find the value of 540,698 articles at thirteen shillings and fourpence halfpenny each.
- (3) Calculate the cost of mowing a meadow containing 29 acres 2 roods 35 poles at 8s. 6d. per acre.
- (4) A bankrupt pays 14s. 2d. in the pound. How much ought a creditor to receive for his debt of £1,516 17s. 6d.?
- M (1) Find the value of 5,971½ at £19 19s. 4½d. each.
- (2) Find the value of 17 yards 3 nails of gold lace at £3 4s. per yard.
- (3) What must be paid for paving a yard containing 2,344 sq. ft. 72 sq. in. at 5s. 6d. per square yard?
- (4) Find the cost of 15 cwt. 3 qrs. 17½ lbs. at £6 17s. 8d. per ton.
- N (1) What are ten thousand nine hundred and twelve chairs worth at nine shillings and fourpence halfpenny each?
- (2) Find the value of 5 cwt. 2 qr. 15 lbs. at £28 per ton.
- (3) What will 1,579½ lbs. of tea cost at 2s. 9½d. per lb?
- (4) A tax of 9d. in the £ is levied on the rental of a number of houses whose annual value is £27,548,687. What will the tax produce?
- O (1) Find the value of 10,006 dwts. at £18 18s. per lb.
- (2) Find the cost of sixteen tons six cwt. twelve lbs. at eight pounds nine shillings and ninepence per cwt.
- (3) Find the value of 17 gallons 3½ pints at 13s. 8d. per gallon.
- (4) Find the cost of 229 casks of sugar, each weighing 4 hundredweights 27 pounds at threepence halfpenny per pound.

- P** (1) Find the value of $2,735\frac{1}{4}$ things at £1 3s. 8d. each.
- (2) Find the tax on a hundred guineas at fourpence halfpenny in the pound.
- (3) What will be the worth of 3 qrs. 27 lbs. at £10 per ton?
- (4) If a person's wages are £14 5s. a year, find, by Practice, what he ought to receive for working 146 days.
- Q** (1) Find the cost of a gross of articles at 6 for $7\frac{1}{2}$ d.
- (2) What would be the cost of 13 lbs. 3 oz. 17 dwts. 11 grs. at £1 2s. 3d. per lb.?
- (3) If a million people pass over a bridge in a year, and are charged a farthing each, what sum of money would be realised?
- (4) An estate consists of 89 ac. 3 ro. 37 po. of pasture, and 73 ac. 2 ro. 17 po. of arable land; it includes also a fir plantation of 10 ac. 1 ro. 12 po. What is its annual value at an average rental of 27s. 6d. an acre?
- R** (1) Find the cost of $876\frac{1}{3}$ articles at £1 17s. 6d. each.
- (2) Find, by Practice, the cost of 5 yards $22\frac{1}{2}$ inches at £2 1s. 2d. per yard.
- (3) Find, by Practice, the value of 128 tons 15 cwts. 3 qrs. 24 lbs. of iron at £16 6s. 8d. per ton.
- (4) If four horses are worth seventy-five pounds twelve shillings, what must be given for seventy-two ponies, of which three are worth one horse?
- S** (1) Find the value of 14 loads 4 qrs. 5 bus. 3 pks. 1 gall. at £4 14s. 4d. per qr.
- (2) If one thousand and eighty-six books cost seven shillings and ninepence per dozen, how much would be left out of fifty pounds after paying for them?
- (3) Find, by Practice, the *annual* rental of a house when eighteen pounds is charged for thirteen weeks.
- (4) Find, by Practice, (a) the weight of $316\frac{3}{4}$ bars of silver, each of which weighs 4 lbs. 15 dwts. 23 grs.; also (b) the total cost at 5s. 6d. per ounce.

BILLS OF PARCELS.

Ex. 64.

Make out the following bills.

- A** London, August 1st, 1878.
Mr. R. Sampson.
 Bought of Mark Pearson.

4 lbs. of sugar at	3½d. per lb.
3 lbs. of soap at	2½d. per lb.
2 lbs. of tea at	3s. 8d. per lb.
6 lbs. of rice at	4½d. per lb.
5 lbs. of bacon at	10½d. per lb.
- B** Pontefract, July 1st, 1870.
Mr. John England.
 Bought of Richard Crofts.

3 lbs. of tea at	3s. 10d. per lb.
1½ lbs. of coffee at	1s. 3d. per lb.
4½ lbs. of ham at	11d. per lb.
11½ lbs. of candles at	6d. per lb.
12 lbs. of butter at	1s. 7½d. per lb.
- C** Leeds, May 10th, 1874.
Mr. George Hemmant.
 Bought of Thomas Nell.

3 yards of tape at	1½d. per yd.
½ dozen handkerchiefs at	1s. 9d. each
2 dozen reels of cotton at	½d. per reel
10½ yards of calico at	7½d. per yd.
18½ yards of ribbon at	1s. 1d. per yd.
- D** Wakefield, January 6th, 1876.
Mr. Robert Marshall.
 Bought of W. W. Clayton.

5 lbs. of mutton at	10½d. per lb.
7½ lbs. of beef at	1s. 0d. per lb.
3½ lbs. of sirloin at	11d. per lb.
8½ lbs. of pork at	9½d. per lb.
15 lbs. of lamb at	11½d. per lb.

E

Manchester, August 9th, 1876.

Mr. David Firth.

Bought of Stones and Scott.

4 lbs. Huntley and Palmer's Biscuits at	8d. per lb.
2½ lbs. of Melton Mowbray Pie at	10½d. per lb.
3½ lbs. of best figs at	1s. 3d. per lb.
10½ lbs. of Cheshire cheese at	11½d. per lb.
7½ lbs. of Barcelona nuts at	7½d. per lb.

F

London, July 1st, 1870.

Mr. William Hurst.

Bought of Peter Robinson.

3½ yards silk at	10s. 6d. per yard
2 dozen buttons at	2½d. per doz.
13½ yards of alpaca at	2s. 3d. per yard
1 lady's bonnet at	two guineas and a half
9½ yards of crape at	11s. 9d. per yard

G

York, January 20th, 1878.

Mr. Joseph Smith.

Bought of Terry and Baxter.

7½ lbs. of butter at	1s. 11d. per lb.
8½ lbs. of cheese at	1s. 1d. per lb.
2 stones (14 lbs.) of salt at	¾d. per lb.
9½ lbs. of vermicelli at	6½d. per lb.
5½ lbs. of raisins at	7d. per lb.

H

Hull, June 10th, 1878.

Mr. John Brett.

Bought of William Archer.

2½ dozen eggs at	two for three-halfpence
5 chickens at	half-a-crown each
11½ lbs. of ham at	1s. 0d. per lb.
1½ lbs. currants at	5½d. per lb.
10½ lbs. of lard at	10d. per lb.

I Manchester, May 1st, 1878.

Mr. Israel Hodgson.

Dr. to West and Co.

27 yards of flannel	at 3s. 4d.	per yard
32 yards of calico	at 5½d.	per yard
3½ dozen stockings	at 8s. 4d.	per dozen
6 pairs of gloves	at 3s. 6d.	per pair
4 best linen collars	at 1s. 5½d.	each

J Nottingham, August 10th, 1877.

Miss Greenwood.

Dr. to Cooper and Co.

5 yards of muslin	at 1s. 2½d.	per yard
39 yards of merino	at 4s. 3½d.	per yard
8 dozen buttons	at 4½d.	per dozen
198 yards of braid	at 1s. 3½d.	per dozen yards
100 reels of cotton	at 7 for 1½d.	

K London, December 20th, 1875.

Mr. James Mead.

Dr. to Thomas Wordsworth.

9 lbs. of black tea	at 4s. 8d.	per lb.
6 lbs. of green tea	at 5s. 10d.	per lb.
10 lbs. of ginger	at 1s. 9½d.	per lb.
18 lbs. of starch	at 6½d.	per lb.
33 lbs. of sugar	at 6½d.	per lb.
½ cwt. of soap	at 4½d.	per lb.

What change ought Mr. Mead to receive if he offered a £10 note in payment of his bill?

L Pontefract, Midsummer, 1878.

Messrs. Westwood and Potts.

Dr. to Hebblewhite and Son.

89 pairs of shoes	at 12s. 9d.	per pair
1,000 slippers	at 15s. 0d.	for twenty
96 boots	at 10 guineas	for a dozen pairs
360 cork soles	at 18s.	per gross

Show how this bill should be receipted.

M

London, June 20th, 1870.

Mr. Pawson.

Bought of the Westminster Supply Association Limited.

12 bars of soap, each weighing $3\frac{1}{2}$ lbs.	at	$5\frac{1}{2}d.$ per lb.
164 lbs. of tea	at	30s. 0d. per doz. lb.
12 pkts. of candles, each containing $6\frac{1}{2}$ lbs.	at	$11\frac{1}{2}d.$ per lb.

Settle the above bill in proper form, allowing a discount
of 5 per cent.

N

Liverpool, March 28th, 1874.

Mr. Henry Barker.

Dr. to James Atkinson.

5 reams of paper	at	1s. 2d. per quire
13,750 envelopes	at	$8\frac{1}{2}d.$ per 100
Binding 5 volumes	at	2s. 11d. per volume
Printing 250 circulars	at	a guinea per 1,000
75 pens	at	half-a-crown a gross

O

Staleybridge, April 2nd, 1873.

Mr. Charles Fletcher.

Bought of Shaw and Co.

$7\frac{1}{2}$ lbs. of sago	at	$7\frac{1}{2}d.$ per lb.
15 lbs. of sugar	at	$4\frac{1}{2}d.$ per lb.
$8\frac{1}{2}$ lbs. of plums	at	$6\frac{3}{4}d.$ per lb.
$\frac{3}{4}$ lb. of tea	at	2d. per ounce
3 lbs. 10 oz. of rice	at	4d. per lb.

P

Bristol, October 15th, 1872.

Mr. Harold Vickers.

Dr. to Hyde, Page and Co.

$1\frac{1}{2}$ lbs. of Valentia almonds	at	10d. per pound
3 lbs. of ginger nuts	at	7d. per pound
$4\frac{1}{2}$ lbs. of citron	at	1s. 1d. per pound
12 lbs. of currants	at	$4\frac{3}{4}d.$ per pound
5 bottles of cherries	at	$8\frac{1}{2}d.$ per bottle
$\frac{1}{2}$ lb. of gelatine	at	3s. 0d. per pound
5 lbs. of Sultana raisins	at	$6\frac{1}{2}d.$ per pound

EXAMINATIONS IN BILLS OF PARCELS.

— — — — —

Ex. 65.

- A** (1) Make out this bill of parcels, and show how it should be receipted,—15 lbs. at $7\frac{1}{2}d.$ per lb.; 8 yards at $7\frac{1}{2}d.$ per yd.; 7 dozen and a half at $1\frac{1}{2}d.$ per doz.; $17\frac{1}{2}$ oz. at $16d.$ per oz.; 7 lbs. at $11\frac{1}{2}d.$ per lb.
- (2) What will the following articles cost,— $42\frac{1}{2}$ yards of carpet at $5s. 6d.$ a yard; 80 pieces of paper at $4s. 6\frac{1}{2}d.$ each; and 24 lbs. 8 oz. of tea at $3s. 8d.$ a lb.?
- (3) Make out this account,—2 doz. pairs of gloves at $2s. 11\frac{1}{2}d.$ a pair; 37 yds. of chintz at $9\frac{3}{4}d.$ a yd.; a gross of buttons at $3\frac{1}{2}d.$ a doz.; and $16\frac{1}{2}$ yds. of fringe at $1s. 8\frac{3}{4}d.$ a doz. yds.
- B** (1) What change shall I have out of five pounds after paying for,— $3\frac{1}{2}$ cwts. of coal at $10\frac{1}{2}d.$ per cwt.; 13 lbs. of cheese at $7\frac{3}{4}d.$ per lb.; $2\frac{3}{4}$ lbs. of tea at $3s. 4d.$ per lb.; 17 lbs. of sugar at $5\frac{1}{2}d.$ per lb.; $3\frac{1}{2}$ yds. of flannel at $1s. 11\frac{1}{2}d.$ per yd.; 29 yds. of calico at $10\frac{3}{4}d.$ per yard?
- (2) Calculate this account,—11 lbs. at $4\frac{1}{2}d.$ per lb.; 15 oz. at $2s. 2\frac{1}{2}d.$ per oz.; $3\frac{3}{4}$ lbs. at $16d.$ per lb.; 40 articles at $7\frac{3}{4}d.$ each; $3\frac{1}{2}$ doz. at $13d.$ per doz.; $4\frac{1}{2}$ yds. at $1s. 6d.$ per yd.; $2\frac{1}{2}$ doz. at 3 for $2d.$
- (3) Allowing discount at $2\frac{1}{2}$ per cent., what will have to be paid for 300 envelopes at $9d.$ per 100; 3 doz. copybooks at $4\frac{1}{2}d.$ each; a gross of penholders at $3\frac{1}{2}d.$ per dozen; 8 penknives at $10\frac{1}{2}d.$ each; 6 quires of foolscap at $7\frac{1}{2}d.$ per quire?
- C** (1) Make out, in proper form, and settle this bill,—2 lbs. of sugar at $4\frac{1}{2}d.$ per lb.; 2 oz. of tea at $3s. 6d.$ per lb.; $5\frac{1}{2}$ yards of calico at $7\frac{1}{2}d.$ per yard; $1\frac{1}{2}$ pecks of flour at $3s. 6d.$ per bushel; $1\frac{1}{2}$ yds. of flannel at $1s. 3d.$ per yd.; $1\frac{1}{2}$ lbs. of butter at $10d.$ per lb.; 3 lbs. of cheese at $7\frac{3}{4}d.$ per lb.
- (2) Find the total cost of,—9 slates at $5\frac{3}{4}d.$ each; $4\frac{1}{2}$ gross pens at $1\frac{1}{2}d.$ per dozen; 16 books at $2s. 7\frac{1}{2}d.$ each; 20 pencils at 2 for $1\frac{1}{2}d.$
- (3) Make out a bill for,— $\frac{3}{4}$ ton at $17s. 6d.$ per cwt.; 1 cwt. at $4\frac{1}{2}d.$ per lb.; $2\frac{1}{2}$ lbs. at $3d.$ per oz.; $5\frac{1}{2}$ dozen at $5\frac{1}{2}d.$ each article; $6\frac{1}{2}$ doz. at $2\frac{1}{2}d.$ each article.
- D** (1) Find the cost of,—50 bottles of wine at $50s.$ per dozen; 3 gallons at $3s.$ per pint; 2 pints at $7s. 6d.$ per gallon; and 9 bottles at a guinea a dozen.
- (2) Make out this butcher's bill,—15 kidneys at 7 for $1s.$; $19\frac{3}{4}$ lbs. of sirloin at $11d.$ per lb.; $5\frac{1}{2}$ lbs. of mutton at $8d.$ per lb.; and $25\frac{1}{2}$ lbs. of pork at $10\frac{1}{2}d.$ per lb.
- (3) Calculate the following items,—16 cwts. at $13d.$ per cwt.; 4 oz. at $\pounds 1$ 18s. per lb.; $10\frac{1}{2}$ yds. at $2s. 3d.$ per yd.; $13\frac{3}{4}$ lbs. at $7d.$ per lb.; $3\frac{1}{2}$ doz. at $9\frac{1}{2}d.$ per doz. Deduct 5 per cent., and then receipt the bill.

- E** (1) Make out, in proper form, the following bill of parcels,—41 lbs. at 3*d.* per oz.; 57 oz. at 3*s.* 6*d.* per lb.; 13½ lbs. at 4*s.* per lb.; and 5½ lbs. at 3*s.* 4½*d.* per lb.
- (2) A hosier and haberdasher's account,—2 dozen shirts at 2*s.* 6½*d.* each; 3½ doz. linen collars at 5*s.* 6*d.* per dozen; 6½ doz. plain fronts at 1*s.* 5*d.* each; 1½ doz. pairs of stockings at 11*d.* per pair.
- (3) What would be the amount of the following rates,—£20 at 3½*d.* in the pound; £50 10*s.* at 4*d.* in the pound; £76 15*s.* at 6*d.* in the pound; and £100 6*s.* 8*d.* at 3*d.* in the pound?
- F** (1) Calculate this fishmonger's bill,—18½ lbs. of cod fish at 3½*d.* per lb.; 10½ lbs. of salmon at 1*s.* 9½*d.* per lb.; 1½ dozen soles at 7½*d.* each; and 2 barrels of oysters, each containing 1 gross, at 1*s.* 1*d.* per dozen.
- (2) Put down in proper form, and work out, this draper's account,—113 yards of ribbon at 3*d.* per doz. yards; 2½ doz. pairs of slippers at 1*s.* 9*d.* per pair; half-a-dozen tablecloths at a guinea and a half each; and 7 dress pieces, each measuring 56 yards, at 2*s.* 6*d.* per yard.
- (3) What will be the total cost of,—17 tickets, each 6 miles, at 1*d.* per mile; 51 tickets, each 21 miles, at 1½*d.* per mile; 63 tickets, each 27 miles, at 1½*d.* per mile; and 178 tickets, each 206 miles, at 2½*d.* per mile?
- G** (1) Work out these items,—30½ lbs. at 11*d.* per lb.; 10½ lbs. at 10½*d.* per lb.; 17½ lbs. at 6*d.* per quarter of a lb.; and 11½ doz. oranges at 3 for 1*d.*
- (2) Make out a bill for the following goods,—3½ doz. wine glasses at 8½*d.* each; 8 tumblers at 14*s.* per doz.; 9 jugs at 1*s.* 11½*d.* each; 1 complete dinner service, ten and a half guineas.
- (3) Calculate these items,—11½ cwts. at 3½*d.* per lb.; 15½ cwts. at three-halfpence per pound; 5 bars of soap, each 20½ lbs., at 4½*d.* per lb.; and 1,253 lbs. of soap at 30*s.* per cwt.
- H** (1) A bill,—2 pieces of bacon, each 15½ lbs., at 10*d.* per lb.; 1,000 oz. of tea at 4*s.* per lb.; 25,000 eggs at 9*d.* per dozen; 10 lbs. of coffee at 2*d.* per oz.
- (2) A bill,—27½ yards at 7*s.* 6*d.* per yd.; 15½ yards at 5*s.* 10½*d.* per yd.; 33½ yds. at 1*s.* 1*d.* per yard; 124½ yards at 2*s.* 3½*d.* per yard.
- (3) Make out this fruiterer's account,—7½ doz. oranges at 7½*d.* per dozen; 10,000 lemons at ¾*d.* each; 120 lbs. of Jargonelle pears at 5½*d.* per lb.; and 3 sacks of apples, each weighing 96 lbs. at 2½*d.* per lb.

- I (1) Make out this account,— $\frac{1}{2}$ cwt. of sugar at $3\frac{1}{2}d.$ per lb.; 4 tons of coals at $10d.$ per cwt.; 60 lbs. at a guinea per qr.; and 50 sacks, each containing 84 lbs., at $5d.$ per lb.
- (2) What will these taxes amount to,—£100 at $7\frac{3}{4}d.$ in the pound; £275 15s. at $1s.8d.$ in the pound; 50 guineas at a shilling in the pound; and £600 0s. $10d.$ at $6d.$ in the pound?
- (3) Calculate this builder's account,—3 men, each $4\frac{1}{2}$ days, at $3s.6d.$ per day; 2 men, each $4\frac{1}{2}$ days, at $4s.9d.$ per day; and $30\frac{1}{2}$ sq. yds. of flagging at $10s.6d.$ per sq. yd.
- J (1) A bill,—100 kerchiefs at $10s.6d.$ per doz.; 4 doz. collars at $9\frac{1}{2}d.$ each; $5\frac{1}{2}$ yards of silk at $5s.4\frac{3}{4}d.$ per yard; 3 nails of velvet at £1 5s. per yard.
- (2) A bookseller's account,—50 vols. at $4\frac{1}{2}d.$ each; 25 vols. at $9d.$ each; 100 vols. at $1s.11d.$ each; 75 vols. at $14s.6d.$ each. Deduct 5 per cent. discount.
- (3) Make out this bill,—20,000 bricks at $30s.6d.$ per 1,000; $\frac{1}{2}$ thousand best fire-bricks at $5s.$ per score; 1,008 slates at $7\frac{1}{2}d.$ per dozen; and 150 sq. ft. of flagging at $8s.0\frac{3}{4}d.$ per square yard.
- K (1) Put down in proper form, and receipt, this wine merchant's bill,—21 doz. port at $4s.8d.$ per bottle; 7 bottles sherry at £5 per doz.; 6 gal. wine at $1s.6d.$ per pint; $\frac{1}{2}$ hhd. wine at $7s.6d.$ per gal.
- (2) A bill,— $127\frac{1}{2}$ yards at £1 4s. $6d.$ per yd.; $54\frac{3}{4}$ yds. at £1 per yd.; $250\frac{1}{2}$ yards at $6s.8d.$ per yd.; $39\frac{1}{4}$ yds. at $17s.1d.$ per yard.
- (3) A bill,—10,900 needles at $11d.$ per 100; 7,500 hooks and eyes at $2d.$ per score; $\frac{1}{2}$ million pins at $1s.$ per 1,000; and 56,750 darning needles at $\frac{1}{2}d.$ per doz.
- L (1) Make out in proper form the following account,—3 bars of silver, each weighing half-a-pound, at $4s.$ per ounce; 12 silver spoons, each weighing $2\frac{1}{2}$ oz., at £3 per pound; and 2,054 grains at £10 10s. per lb.
- (2) Calculate the following cloth account,— $3\frac{1}{2}$ yards black at $17s.6d.$ per yd.; $4\frac{3}{4}$ yds. worsted at $15s.$ per yd.; $\frac{3}{4}$ yd. velvet at $19s.6d.$ per yd.; $2\frac{1}{2}$ yds. superfine at £1 1s. per yd.
- (3) Arrange with proper head lines, and work out, the following butcher's bill,— $57\frac{1}{2}$ lbs. mutton at $11\frac{1}{2}d.$ per lb.; 40 lbs. 2 oz. beef at $1s.$ per lb.; $20\frac{3}{4}$ lbs. pork at $9\frac{3}{4}d.$ per lb.; 31 lbs. 6 oz. veal at $11\frac{1}{2}d.$ per lb.; and $12\frac{1}{2}$ lbs. lamb at $11\frac{3}{4}d.$ per lb.

- M** (1) Make out the following account,— $24\frac{1}{2}$ yds. of stout pipe at $6\frac{1}{2}d.$ per foot; 18 joints at $15d.$ each; $3\frac{1}{2}$ doz. pipe books at $1\frac{1}{2}d.$ each; $157\frac{1}{2}$ yds. wire fencing at $2s. 1d.$ per yd.; 4 men, each 2 days, at $3s. 6d.$ per day.
- (2) Calculate this timber merchant's account,— $67\frac{1}{2}$ feet of window sashes at $9\frac{1}{2}d.$ per foot; 5 cub. yds. 19 cub. ft. of oak at $4s. 7\frac{3}{4}d.$ per cubic foot; 245 feet of ash at $2s. 0\frac{1}{2}d.$ per foot; $127\frac{1}{2}$ feet of deal at $3\frac{1}{2}d.$ per foot.
- (3) An invoice,— $17\frac{3}{4}$ yds. at $9\frac{3}{4}d.$ per yd.; $9\frac{1}{2}$ yds. at $12s. 7\frac{1}{2}d.$ per yd.; $3\frac{1}{2}$ yds. at $10s.$ per yd.; $13\frac{3}{4}$ doz. yds. at $2\frac{1}{2}d.$ for 6 yards.
- N** (1) Make out this bill,—29 lbs. of ham at $8\frac{1}{2}d.$ per lb.; 13 lbs. of bacon at $7\frac{1}{2}d.$ per lb.; a cheese, weighing $29\frac{1}{2}$ lbs., at $7\frac{1}{2}d.$ per lb.; and three score eggs at $\frac{3}{4}d.$ each.
- (2) Write out an invoice for,— $12\frac{1}{2}$ doz. brushes at $8s. 7\frac{1}{2}d.$ each; 162 plates at $4s. 11\frac{1}{4}d.$ per doz.; and 3 gross spoons at $4s. 4d.$ per dozen.
- (3) A lady buys at a draper's shop,—23 yds. of silk at $5s. 6d.$ per yd.; 33 yards of calico at $11\frac{1}{2}d.$ per yd.; 2 doz. pairs of gloves at $2s. 7d.$ per pair; 10 yds. of ribbon at $1s. 10d.$ per yd. If the draper charges the lady £11 17s. $8\frac{1}{2}d.$, find the amount of his error.
- O** (1) Make out a bill for,—5 chests of tea, each 2 qrs. 11 lbs., at $3s. 8d.$ per lb.; 3 hhds. of sugar, each 13 cwt. 2 qrs., at $39s. 4d.$ per cwt.; 3 cwt. 1 qr. 14 lbs. of coffee at $49s. 6d.$ per cwt.; and 14 cwt. 2 qrs. 3 lbs. of cheese at $5\frac{1}{2}d.$ per lb.
- (2) Work out these items,—35,000 feet of gas at $3s. 6d.$ per 1,000 ft.; 1 year's rental of meter at $7\frac{1}{2}d.$ per quarter; and a man's time, 17 hours, at $5\frac{3}{4}d.$ per hour.
- (3) If I sell 17 horses at an average price of $47\frac{1}{2}$ guineas, and then buy 374 qrs. 7 bus. 2 pks. of wheat at £2 3s. $8d.$ per qr., how much money shall I have left?
- P** (1) Find the cost of,—472 boxes of matches at 6 for $\frac{3}{4}d.$; $59\frac{1}{2}$ lbs. of windsor soap at $5\frac{1}{2}d.$ per lb.; 8 bars of soap, each weighing 20 lbs., at 3 lbs. for $8\frac{1}{2}d.$; $1\frac{1}{2}$ cwt. soda at $2\frac{1}{2}d.$ per lb.
- (2) Make out this account,— $40\frac{1}{2}$ qrs. of wheat at £10 12s. per load; 250 qrs. of barley at 5s. per bush.; 180 bush. of oats at £12 per qr.
- (3) Find the total rental of the following 5 farms,—(1) 263 ac. 38 po. at £1 11s. $6d.$ per acre; (2) 457 ac. 39 po. at £1 5s. per acre; (3) 49 ac. 3 ro. 5 po. at £2 5s. per acre; (4) 156 ac. 2 ro. 32 po. at £1 15s. per acre; (5) 146 ac. 1 ro. 39 po. at £1 13s. $4d.$ per acre.

RULE OF THREE.

(To be worked by the method of Unity.)

 Ex. 6^c.

- A** (1) If 8 oranges cost 4*d.*, what will 36 oranges cost?
 (2) If 2 lbs. of sugar cost 6*d.*, what will 24 lbs. cost?
 (3) If 4 lbs. of potatoes cost 6*d.*, what will 32 lbs. cost?
 (4) If 5 pears cost 3*d.*, what will 35 pears cost?
- B** (1) 24 men can mow 6 acres, how many acres can 6 men mow?
 (2) 2*s.* 6*d.* will buy 12 lbs. of flour, how many lbs. will 10*s.* buy?
 (3) A quart of oil costs 5*d.*, what will be the cost of 16 pints?
 (4) Two pounds of coffee cost 3*s.* 4*d.*, what will 15 lbs. cost?
- C** (1) If 6 barrels of sugar weigh 1,260 lbs., what will be the weight of 96 barrels?
 (2) Sugar may be bought at the rate of 28*s.* per cwt., what is the price per lb.?
 (3) Two pounds of tea cost 5*s.*, what will 8 ounces cost?
 (4) Three pounds of coffee cost 5*s.*, what will 4 ounces cost?
- D** (1) Sixteen yards of calico cost 5*s.* 4*d.*, what will 128 yds. cost?
 (2) Four yards of linen cost 5*s.*, what will 60 yards cost?
 (3) Eight yards of muslin cost 2*s.* 8*d.*, what will 144 yds. cost?
 (4) Four pairs of stockings cost 6*s.*, what will 160 pairs cost?
- E** (1) If 6 pairs of boots can be bought for 4 guineas, how many pairs can be bought for £21 at the same rate?
 (2) If 15*s.* 9*d.* will buy 3 pairs of slippers, how much will buy 18 pairs?
 (3) If the cost of 3 lbs. of leather is 4*s.* 6*d.*, what will 96 lbs. cost?
 (4) Six pairs of boot laces cost 9*d.*, how many pairs may be bought for 30*s.*?
- F** (1) Butter is sold at the rate of 1*s.* 4*d.* per lb., what would 1 cwt. be sold for?
 (2) How much cheese can be bought for £5, when 2 lbs. cost 1*s.* 8*d.*?
 (3) Candles are sold at the rate of 3*s.* 6*d.* for 7 lbs., how many lbs. can I buy for 5 guineas?
 (4) Eggs are sold at the rate of 18 for 1*s.*, how many can I purchase for three half-guineas?

RULE OF THREE.

- G** (1) I buy a gross of pens for 1s. 6d., how many dozen can I buy for 24s.?
- (2) Twenty acres of land are worth £50, what are 240 acres worth?
- (3) A man earns £1 5s. a week, how much will he earn in three years?
- (4) Two gallons of wine cost £1 16s., what will be the cost of a hogshead?
- H** (1) If 16 men can do a piece of work in 28 days, in what time can 112 men do the same amount?
- (2) If 16 cows are worth £192, what are 144 cows worth?
- (3) If 3 tons of coal cost £3 15s., what is the cost of 5 cwt.?
- (4) If 20 horses are worth £600, what are 240 horses worth?
- (1) Twenty men earn £75 in 3 weeks, in what time would they earn £900?
- (2) A man carries a load 10 miles for 22s. 6d., how far ought he to carry the same load for £10 2s. 6d.?
- (3) If 36 men can build a wall in 12 days, in how many days could 126 men build it?
- (4) If 720 yards of cloth cost £108, what will be the cost of 20 yards?
- J** (1) If a man can walk 18 miles in $4\frac{1}{2}$ hours, in what time can he walk 540 miles?
- (2) If 284 sheep cost £639, what will be the cost of 32 sheep?
- (3) If 28 cows are worth 168 sheep, how many sheep can I get in exchange for 252 cows?
- (4) Land can be bought at the rate of 4 acres 2 roods for £27, how much would have to be given for a square mile of land?
- K** (1) A train travels at the rate of $45\frac{1}{2}$ miles an hour, in what time will it travel from Leeds to London, a distance of about $204\frac{1}{2}$ miles?
- (2) If 1,080 bricks will build a wall 12 feet long, how many bricks will be required to build a wall 12 yards 2 feet long?
- (3) A man stepping 30 inches at a time takes 3,200 steps in travelling a certain distance; how many steps will another man take travelling the same distance, each step being 32 inches?
- (4) A train going at the rate of 52 miles an hour travels for 12 hours, how long would it take another train going at the rate of 48 miles an hour to travel the distance travelled by the first train in the 12 hours?

RULE OF THREE.

- E** (1) If 8 casks of sugar weigh 4 cwt. 2 qrs., what will be the weight of 24 casks, each of the latter casks being half the size of the former?
- (2) Sixteen men can do a piece of work in 48 days; in how many days can 10 men and 30 boys do the same work, if one man does as much as two boys?
- (3) A man walks 16 miles 6 furlongs in $3\frac{1}{2}$ hours, in what time will he walk 150 miles 6 fur.?
- (4) If a steam engine consumes 20 tons of coal in $4\frac{1}{2}$ days, how much coal would it consume in travelling 1,000 miles, at the rate of 50 miles an hour?
- M** (1) Two brothers invest together in a concern the sum of £10,000: one receives as his share of the profits £300 per annum, the other £200 per annum: how much did each invest?
- (2) A ship sails 2,000 miles in 7 days, at what rate is she travelling per hour?
- (3) If 420 chests of tea weigh 14 tons, what will be the weight of 20 chests?
- (4) A person has an income of £320 a year. The income-tax is 4d. in the £. No charge is made on £150 of the income. What is the amount of the tax to be paid?
- N** (1) If 52 bushels of wheat can be bought for £13 8s. 8d., how much money will buy 540 bushels?
- (2) A bankrupt can only pay 5s. in the £. He pays his creditors altogether £820 10s. What do his debts amount to?
- (3) What is the value of 14 lbs. of gold, when an ounce is worth £3 17s. 6½d.?
- (4) Thirty men cut a canal 3 miles 4 fur. long in 219 days, in what time would they cut a canal 225 miles long?
- O** (1) A person walks at the rate of 20 miles a day, and performs a journey in 40 days, in what time would he have performed the journey if he had walked at the rate of 25 miles a day?
- (2) To make 15 suits of clothes 75 yds. 3 qrs. of cloth are required, how many suits can be made out of 25 yds. 1 qr.?
- (3) The amount of grain yielded by 320 acres is 540 qrs. 6 bus., how much will 20 acres yield?
- (4) If 108 cows are allowed to graze in a field 12 days for £30, for how long ought 12 cows be allowed to graze for the same money?

- P** (1) A barracks containing 2,000 soldiers is provisioned for 21 days, how long would the same amount of provisions supply 420 men?
- (2) If 2 lbs. 4 oz. of a drug be purchased for £5 10s., what is the cost of 3 drams?
- (3) If 3 pockets of hops each weighing $2\frac{1}{2}$ cwt. are worth £30 15s., what is the price per cwt.?
- (4) A grocer bought 4 tubs of butter each containing 80 lbs. for £20, what did he pay per lb.?
- Q** (1) A bankrupt owed £3,760, and he had only £1,200 wherewith to pay his debts, how much did he pay in the £?
- (2) How many lbs. of tea at 2s. 6d. per lb. can be obtained in exchange for 220 lbs. at 3s. per lb.?
- (3) If £200 yields an interest of £25, how much interest will be yielded by £2,750?
- (4) The interest on £5,250 is £262 10s., what is the interest on £100?
- R** (1) If a grocer makes up 45 packages each containing 3 lbs. of sugar out of one barrel, and sells each package for 1s. 2d., how much money would he obtain for the packages of the same weight made out of 20 barrels?
- (2) If 2 cwt. 2 qrs. of sugar cost £3 10s., what will be the cost of 28 lbs. 4 oz.?
- (3) If 4 lbs. 8 oz. of tea cost 13s. 6d., what will be the cost of 1,696 oz.?
- (4) Tobacco being sold at the rate of 1s. 6d. for 4 oz., how much should I have to give for a cake of tobacco weighing 16 lb. 2 oz.?
- S** (1) If 14 sacks of potatoes each weighing 12 stone are sold for £9 16s., for what sum will 6 stone $3\frac{1}{2}$ lbs. be sold?
- (2) Twenty-four casks are made by 6 men in 14 days, in how many days could 27 men make them?
- (3) If 27 men earn £67 10s. in a fortnight, how much will they earn in a year?
- (4) If 13 pigs each weighing twenty score are worth £97 10s., what is the worth of 50 cows, each cow being worth two pigs?
- T** (1) If a horse is worth 3 cows, and 20 cows are sold for £250, for how much will 15 horses be sold?
- (2) Two cows are worth 14 sheep, what must be given for 24 cows when 30 sheep cost £60?
- (3) If a swallow flies at the rate of 90 miles an hour, in what time would it fly from England to Egypt, a distance of 1,170 miles?
- (4) How long would it take a sailing ship to go from England to Sydney in Australia, a distance of 15,000 miles, if it sails at the rate of 10 miles an hour and is becalmed for 12 days?

- U (1) If 10 men can plant a garden with an area of 8,500 square yards in 20 days, in what time can they plant a garden with an area of 1,750 sq. ft.?
- (2) If a man can plough a field of 3 acres in 6 days, in what time can he plough a field of 2,420 sq. yds.?
- (3) If four boys can dig a trench 12 ft. 6 in. long in 2 hours 20 min., in what time can they dig a trench 25 yards long?
- (4) If 10 men and 2 boys can do a piece of work in 25 days, in what time could 132 boys do the same work, supposing one man to be worth two boys?
- V (1) A garrison of 800 men are provisioned for 20 days, they receive a reinforcement of 50 men, how long will the provisions last?
- (2) Twenty-four men were engaged to do a piece of work: the work was to be finished in 12 days: six men not putting in an appearance, how much extra time must be given in order to complete the work?
- (3) Fifteen pigs cost £97 10s.: three of them die: for what sum must each of the others be sold in order to realise the money given for the fifteen?
- (4) One goose is worth two ducks: 200 ducks cost £33 6s. 8d.: what would 36 geese cost?
- W (1) A cistern can be emptied by 12 men in 32 days; it being found necessary, however, to have it emptied in one-eighth of this time, how many additional men must be employed?
- (2) If a field will supply 28 horses with grass for 80 days, for how long will it supply 168 cows, if two cows eat as much as one horse?
- (3) If 2 oz. of tea are worth 6d., what is the value of 10 chests of tea each weighing 120 lbs.?
- (4) A man contracts to do a piece of work in 20 days, and engages 36 men; the wage of each man is 6s. 9d. a day, how much will each man receive if the master distributes equally among them £18 more than they have earned, and what is the total amount of money received by the men?
- X (1) How many men can mow a field of 40 acres 2 ro. 20 per. in 12 days, if 4 men can mow 4 acres 0 ro. 10 per. in the same time?
- (2) A field is 60 yds. long and 30 yds. wide, how long will it take a man to mow it who mows 10 square yards of grass in 12 minutes?
- (3) If a publican gains 3d. on every gallon of beer he sells, how many barrels must he sell in order that he may clear £300 annually?
- (4) A grocer gains 2½d. on every pound of tobacco he sells, how many ounces must he sell in order to make a profit of £50 a year?

- Y** (1) If the sixpenny loaf weighs 4 lbs. when wheat is at 45s. per quarter, what should it weigh when wheat is at 60s. per quarter?
- (2) A schoolmaster has a salary of £200 a year; he wishes to save £44 each year, how much will he be able to spend every month of four weeks?
- (3) Light travels at the rate of about 192,000 miles a second, how long would the light of the sun be reaching the earth, the distance of the sun from the earth being 95,000,000 miles?
- (4) Sound travels at the rate of about 1,090 feet per second: I hear the report of a cannon 10 seconds after I see the flash: how far am I from the cannon.
- Z** (1) A piece of work is to be done by 90 men in 36 days; if 30 of the men absent themselves, how long will it take the others to do the work alone?
- (2) If a boy can write 6 lines in 3 minutes, each line containing 12 words, in what time can he write a page of a book containing 32 lines of 10 words each?
- (3) If 240 men can lay 16 miles of rails in 25 days, how long would it take the same number of men to lay 256 miles 16 poles of rails?
- (4) A boy playing at marbles wins 24 in 55 minutes; how many would he win in four weeks, not playing on Sundays, supposing him to play 10 hours a day?

GREATEST COMMON MEASURE.

Ex. 67.

Find the Greatest Common Measure of .

A	B	C
(1) 99 and 143	(1) 531 and 711	(1) 234 and 842
(2) 225 and 325	(2) 132 and 588	(2) 1,449 and 1,953
(3) 238 and 266	(3) 272 and 422	(3) 2,425 and 3,201
(4) 273 and 377	(4) 943 and 1,633	(4) 1,545 and 3,811
(5) 527 and 697	(5) 423 and 893	(5) 155 and 5,005
(6) 678 and 786	(6) 371 and 583	(6) 2,121 and 14,000
D	E	F
(1) 63, 99 and 117	(1) 2,737, 3,689 and 4,641	(1) 62, 93, 124 and 155
(2) 66, 165 and 231	(2) 3,503, 6,893 and 8,023	(2) 215, 301, 387 and 473
(3) 116, 261 and 319	(3) 4,277, 4,559 and 4,747	(3) 413, 531, 649 and 767
(4) 333, 407 and 481	(4) 1,281, 1,891 and 2,501	(4) 201, 335, 469 and 737
(5) 465, 615 and 915	(5) 1,679, 3,139 and 3,869	(5) 143, 195, 221 and 247
(6) 218, 545 and 763	(6) 453, 604 and 755	(6) 247, 285, 323 and 457

VULGAR FRACTIONS.

LEAST COMMON MULTIPLE.

Ex. 68.

Find the Least Common Multiple of

A	B	C
(1) 2, 3, 4, 5, 6, 7, 8, 9	(1) 24, 36, 72, 360	(1) 10, 24, 32, 25, 45
(2) 5, 12, 15, 6, 10, 60	(2) 17, 51, 289, 1,020	(2) 5, 12, 15, 60, 125
(3) 4, 9, 12, 18, 24	(3) 11, 21, 22, 27, 36	(3) 3, 18, 51, 204, 27
(4) 3, 7, 12, 28, 15	(4) 18, 24, 28, 42, 56	(4) 4, 13, 26, 78, 39
(5) 6, 16, 12, 32, 48	(5) 9, 15, 18, 24, 27	(5) 12, 18, 32, 54, 72
(6) 7, 8, 112, 35, 63	(6) 54, 63, 162, 7, 9	(6) 18, 40, 90, 45, 120
D	E	
(1) 5, 6, 10, 45, 36, 54	(1) 210, 420, 360, 240	
(2) 7, 12, 28, 36, 15, 9, 16	(2) 1,080, 360, 960, 648	
(3) 4, 6, 8, 10, 16, 24, 36	(3) 1,120, 504, 84, 672	
(4) 3, 15, 12, 30, 40, 72	(4) 1,440, 432, 288, 216	
(5) 8, 12, 18, 32, 40, 120	(5) 1,920, 336, 432, 2,880	
(6) 5, 12, 18, 30, 36, 56	(6) 1,760, 792, 44, 96, 36	
F		
(1) 640, 240, 360, 520, 960		
(2) 35, 50, 75, 125, 720, 1,000		
(3) 42, 273, 189, 168, 441, 378		
(4) 56, 252, 168, 224, 336		
(5) 72, 180, 324, 396, 336, 224		
(6) 518,003, 544,231, 583,573		

VULGAR FRACTIONS.

Ex. 69.

Reduce the following to Improper Fractions.

A	B	C	D	E	F
(1) $2\frac{1}{2}$, $2\frac{1}{3}$	(1) $11\frac{1}{2}$, $12\frac{1}{3}$	(1) $2\frac{2}{3}$	(1) $12\frac{1}{2}$	(1) $104\frac{1}{2}$	(1) $162\frac{1}{2}$
(2) $2\frac{1}{3}$, $2\frac{1}{4}$	(2) $12\frac{1}{3}$, $13\frac{1}{3}$	(2) $3\frac{1}{3}$	(2) $13\frac{1}{3}$	(2) $107\frac{1}{2}$	(2) $324\frac{1}{2}$
(3) $3\frac{1}{3}$, $4\frac{1}{3}$	(3) $14\frac{1}{3}$, $15\frac{1}{3}$	(3) $4\frac{1}{3}$	(3) $19\frac{1}{3}$	(3) $210\frac{1}{2}$	(3) $122\frac{1}{2}$
(4) $5\frac{1}{2}$, $6\frac{1}{2}$	(4) $16\frac{1}{2}$, $17\frac{1}{2}$	(4) $5\frac{1}{2}$	(4) $22\frac{1}{2}$	(4) $321\frac{1}{2}$	(4) $365\frac{1}{2}$
(5) $7\frac{1}{2}$, $8\frac{1}{2}$	(5) $18\frac{1}{2}$, $19\frac{1}{2}$	(5) $6\frac{1}{2}$	(5) $50\frac{1}{2}$	(5) $52\frac{1}{2}$	(5) $175\frac{1}{2}$
(6) $9\frac{1}{2}$, $10\frac{1}{2}$	(6) $20\frac{1}{2}$, $21\frac{1}{2}$	(6) $8\frac{1}{2}$	(6) $63\frac{1}{2}$	(6) $75\frac{1}{2}$	(6) $2,463\frac{1}{2}$

Ex. 70.

Reduce the following to Whole or Mixed Numbers.

A	B	C	D	E	F
(1) $\frac{3}{4}$, $\frac{1}{2}$	(1) $2\frac{1}{2}$, $2\frac{1}{3}$	(1) $\frac{1}{2}$	(1) $10\frac{1}{2}$	(1) $2\frac{1}{2}$	(1) $2\frac{1}{2}$
(2) $\frac{1}{2}$, $\frac{1}{3}$	(2) $1\frac{1}{2}$, $2\frac{1}{3}$	(2) $\frac{1}{3}$	(2) $2\frac{1}{2}$	(2) $10\frac{1}{2}$	(2) $2\frac{1}{2}$
(3) $\frac{1}{3}$, $\frac{1}{4}$	(3) $2\frac{1}{3}$, $1\frac{1}{4}$	(3) $1\frac{1}{4}$	(3) $1\frac{1}{2}$	(3) $2\frac{1}{2}$	(3) $2\frac{1}{2}$
(4) $1\frac{1}{2}$, $\frac{1}{2}$	(4) $2\frac{1}{2}$, $2\frac{1}{2}$	(4) $2\frac{1}{2}$	(4) $1\frac{1}{2}$	(4) $1\frac{1}{2}$	(4) $1\frac{1}{2}$
(5) $1\frac{1}{2}$, $1\frac{1}{2}$	(5) $1\frac{1}{2}$, $1\frac{1}{2}$	(5) $2\frac{1}{2}$	(5) $1\frac{1}{2}$	(5) $1\frac{1}{2}$	(5) $2\frac{1}{2}$
(6) $1\frac{1}{2}$, $1\frac{1}{2}$	(6) $1\frac{1}{2}$, $1\frac{1}{2}$	(6) $2\frac{1}{2}$	(6) $1\frac{1}{2}$	(6) $1\frac{1}{2}$	(6) $1\frac{1}{2}$

Ex. 71.

Reduce the following to their Lowest Terms.

A	B	C	D	E	F
(1) $\frac{2}{3}, \frac{4}{5}$	(1) $\frac{2}{3}, \frac{4}{5}$	(1) $\frac{1}{10}, \frac{1}{15}$	(1) $\frac{2}{3}, \frac{4}{5}$	(1) $\frac{2}{3}, \frac{4}{5}$	(1) $\frac{1}{10}, \frac{1}{15}$
(2) $\frac{1}{2}, \frac{1}{3}$	(2) $\frac{1}{2}, \frac{1}{3}$	(2) $\frac{1}{10}, \frac{1}{15}$	(2) $\frac{1}{10}, \frac{1}{15}$	(2) $\frac{1}{10}, \frac{1}{15}$	(2) $\frac{1}{10}, \frac{1}{15}$
(3) $\frac{1}{2}, \frac{1}{3}$	(3) $\frac{1}{2}, \frac{1}{3}$	(3) $\frac{1}{10}, \frac{1}{15}$	(3) $\frac{1}{10}, \frac{1}{15}$	(3) $\frac{1}{10}, \frac{1}{15}$	(3) $\frac{1}{10}, \frac{1}{15}$
(4) $\frac{1}{2}, \frac{1}{3}$	(4) $\frac{1}{2}, \frac{1}{3}$	(4) $\frac{1}{10}, \frac{1}{15}$	(4) $\frac{1}{10}, \frac{1}{15}$	(4) $\frac{1}{10}, \frac{1}{15}$	(4) $\frac{1}{10}, \frac{1}{15}$
(5) $\frac{1}{2}, \frac{1}{3}$	(5) $\frac{1}{2}, \frac{1}{3}$	(5) $\frac{1}{10}, \frac{1}{15}$	(5) $\frac{1}{10}, \frac{1}{15}$	(5) $\frac{1}{10}, \frac{1}{15}$	(5) $\frac{1}{10}, \frac{1}{15}$
(6) $\frac{1}{2}, \frac{1}{3}$	(6) $\frac{1}{2}, \frac{1}{3}$	(6) $\frac{1}{10}, \frac{1}{15}$	(6) $\frac{1}{10}, \frac{1}{15}$	(6) $\frac{1}{10}, \frac{1}{15}$	(6) $\frac{1}{10}, \frac{1}{15}$

Ex. 72.

Reduce the following to Simple Fractions.

A	B	C	D
(1) $\frac{2}{3}$ of $\frac{3}{4}$	(1) $\frac{1}{2}$ of $\frac{3}{4}$ of $\frac{4}{5}$	(1) $\frac{1}{2}$ of $10\frac{1}{2}$ of $\frac{3}{4}$	(1) $\frac{1}{2}$ of $\frac{3}{4}$ of $\frac{1}{2}$ of $\frac{3}{4}$
(2) $\frac{1}{2}$ of $\frac{1}{3}$	(2) $\frac{1}{2}$ of $\frac{1}{3}$ of $\frac{1}{2}$	(2) $\frac{1}{2}$ of $9\frac{1}{2}$ of $\frac{1}{2}$	(2) $\frac{1}{2}$ of $\frac{1}{2}$ of $\frac{3}{4}$ of 63
(3) $\frac{1}{2}$ of $\frac{1}{3}$	(3) $\frac{1}{2}$ of $\frac{1}{3}$ of 9	(3) $\frac{1}{2}$ of $1\frac{1}{2}$ of $\frac{3}{4}$	(3) $\frac{1}{2}$ of $\frac{1}{2}$ of $3\frac{1}{2}$ of 220
(4) $\frac{1}{2}$ of $\frac{1}{3}$	(4) $\frac{1}{2}$ of $\frac{1}{3}$ of $\frac{1}{2}$	(4) $\frac{1}{2}$ of $1\frac{1}{2}$ of $6\frac{1}{2}$	(4) $\frac{1}{2}$ of $3\frac{1}{2}$ of $\frac{1}{2}$ of $\frac{1}{2}$
(5) $\frac{1}{2}$ of $\frac{1}{3}$	(5) $\frac{1}{2}$ of $\frac{1}{3}$ of $\frac{1}{2}$	(5) $\frac{1}{2}$ of $12\frac{1}{2}$ of $\frac{1}{2}$	(5) $\frac{1}{2}$ of $\frac{1}{2}$ of $8\frac{1}{2}$ of $\frac{1}{2}$
(6) $\frac{1}{2}$ of $\frac{1}{3}$	(6) $\frac{1}{2}$ of $\frac{1}{3}$ of $\frac{1}{2}$	(6) $\frac{1}{2}$ of $5\frac{1}{2}$ of $8\frac{1}{2}$	(6) $\frac{1}{2}$ of $\frac{1}{2}$ of $1\frac{1}{2}$ of $5\frac{1}{2}$
(7) $\frac{1}{2}$ of $\frac{1}{3}$	(7) $\frac{1}{2}$ of $3\frac{1}{2}$ of $\frac{1}{2}$	(7) $\frac{1}{2}$ of $4\frac{1}{2}$ of $12\frac{1}{2}$	(7) $\frac{1}{2}$ of $\frac{1}{2}$ of $\frac{1}{2}$ of 60
(8) $\frac{1}{2}$ of $\frac{1}{3}$	(8) $\frac{1}{2}$ of $2\frac{1}{2}$ of 10	(8) $\frac{1}{2}$ of $\frac{1}{2}$ of $\frac{1}{2}$	(8) $\frac{1}{2}$ of $8\frac{1}{2}$ of $\frac{1}{2}$ of 320
(9) $\frac{1}{2}$ of $\frac{1}{3}$	(9) $\frac{1}{2}$ of $5\frac{1}{2}$ of $\frac{1}{2}$	(9) $\frac{1}{2}$ of $1\frac{1}{2}$ of $1\frac{1}{2}$	(9) $\frac{1}{2}$ of $10\frac{1}{2}$ of $\frac{1}{2}$ of 45
(10) $\frac{1}{2}$ of $\frac{1}{3}$	(10) $\frac{1}{2}$ of $3\frac{1}{2}$ of $\frac{1}{2}$	(10) $\frac{1}{2}$ of $3\frac{1}{2}$ of $3\frac{1}{2}$	(10) $\frac{1}{2}$ of $\frac{1}{2}$ of $6\frac{1}{2}$ of 63

Ex. 73.

Reduce the following to their Least Common Denominator.

(Proper Fractions, with Denominators not exceeding 10.)

A	B	C	D	E
(1) $\frac{1}{2}, \frac{1}{3}$	(1) $\frac{1}{2}, \frac{1}{3}$	(1) $\frac{2}{5}, \frac{1}{10}$	(1) $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}$	(1) $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}$
(2) $\frac{2}{3}, \frac{1}{2}$	(2) $\frac{2}{3}, \frac{1}{2}$	(2) $\frac{2}{5}, \frac{1}{10}$	(2) $\frac{2}{5}, \frac{1}{10}$	(2) $\frac{2}{5}, \frac{1}{10}, \frac{1}{15}$
(3) $\frac{2}{3}, \frac{1}{2}$	(3) $\frac{2}{3}, \frac{1}{2}$	(3) $\frac{2}{5}, \frac{1}{10}$	(3) $\frac{2}{5}, \frac{1}{10}$	(3) $\frac{2}{5}, \frac{1}{10}, \frac{1}{15}$
(4) $\frac{2}{3}, \frac{1}{2}$	(4) $\frac{2}{3}, \frac{1}{2}$	(4) $\frac{2}{5}, \frac{1}{10}$	(4) $\frac{2}{5}, \frac{1}{10}$	(4) $\frac{2}{5}, \frac{1}{10}, \frac{1}{15}$
(5) $\frac{2}{3}, \frac{1}{2}$	(5) $\frac{2}{3}, \frac{1}{2}$	(5) $\frac{2}{5}, \frac{1}{10}$	(5) $\frac{2}{5}, \frac{1}{10}$	(5) $\frac{2}{5}, \frac{1}{10}, \frac{1}{15}$
(6) $\frac{2}{3}, \frac{1}{2}$	(6) $\frac{2}{3}, \frac{1}{2}$	(6) $\frac{2}{5}, \frac{1}{10}$	(6) $\frac{2}{5}, \frac{1}{10}$	(6) $\frac{2}{5}, \frac{1}{10}, \frac{1}{15}$

- F (1) Find the greatest and the least of the fractions $\frac{2}{3}, \frac{1}{2}, \frac{1}{3}$, and $\frac{1}{4}$.
- (2) Find the greatest and the least of the fractions $\frac{2}{3}, \frac{1}{2}, \frac{1}{3}$, and $\frac{1}{4}$.
- (3) Arrange in order, from the greatest to the least, $\frac{2}{3}, \frac{1}{2}, \frac{1}{3}$, and $\frac{1}{4}$.
- (4) Arrange in order, from the least to the greatest, $\frac{2}{3}, \frac{1}{2}, \frac{1}{3}$, and $\frac{1}{4}$.

ADDITION.

(Proper Fractions, with Denominators not exceeding 10.)

Ex. 74.

- | A | B | C | D | E |
|---------------------------------|---------------------------------|--|--|--|
| (1) $\frac{1}{2} + \frac{2}{3}$ | (1) $\frac{1}{2} + \frac{3}{4}$ | (1) $\frac{1}{2} + \frac{3}{4} + \frac{1}{5}$ | (1) $\frac{5}{8} + \frac{4}{9} + \frac{3}{10}$ | (1) $\frac{1}{2} + \frac{3}{4} + \frac{5}{6} + \frac{7}{8}$ |
| (2) $\frac{2}{3} + \frac{3}{4}$ | (2) $\frac{2}{3} + \frac{1}{2}$ | (2) $\frac{3}{4} + \frac{1}{3} + \frac{1}{2}$ | (2) $\frac{1}{8} + \frac{2}{9} + \frac{1}{10}$ | (2) $\frac{3}{4} + \frac{2}{3} + \frac{1}{2} + \frac{5}{6}$ |
| (3) $\frac{3}{4} + \frac{1}{2}$ | (3) $\frac{5}{6} + \frac{1}{3}$ | (3) $\frac{2}{3} + \frac{1}{5} + \frac{1}{10}$ | (3) $\frac{3}{4} + \frac{1}{3} + \frac{1}{5}$ | (3) $\frac{5}{6} + \frac{1}{2} + \frac{1}{10} + \frac{3}{5}$ |
| (4) $\frac{1}{2} + \frac{1}{3}$ | (4) $\frac{1}{3} + \frac{1}{4}$ | (4) $\frac{1}{4} + \frac{1}{5} + \frac{1}{6}$ | (4) $\frac{1}{10} + \frac{1}{6} + \frac{1}{5}$ | (4) $\frac{1}{5} + \frac{1}{3} + \frac{1}{2} + \frac{1}{4}$ |
| (5) $\frac{2}{3} + \frac{1}{4}$ | (5) $\frac{1}{2} + \frac{1}{3}$ | (5) $\frac{1}{3} + \frac{1}{4} + \frac{1}{5}$ | (5) $\frac{2}{3} + \frac{1}{4} + \frac{1}{5}$ | (5) $\frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5}$ |
| (6) $\frac{1}{2} + \frac{1}{5}$ | (6) $\frac{1}{3} + \frac{1}{4}$ | (6) $\frac{1}{4} + \frac{1}{5} + \frac{1}{6}$ | (6) $\frac{1}{5} + \frac{1}{6} + \frac{1}{7}$ | (6) $\frac{1}{3} + \frac{1}{4} + \frac{1}{5} + \frac{1}{6}$ |
- F (1) $\frac{1}{2}$ of $\frac{2}{3} + \frac{2}{3}$ of $\frac{1}{3}$; $\frac{1}{3}$ of $\frac{1}{2} + \frac{1}{2}$ of $\frac{1}{2}$; $\frac{1}{5}$ of $\frac{2}{3} + \frac{1}{3}$ of $\frac{1}{3}$.
 (2) $\frac{1}{2}$ of $\frac{1}{2} + \frac{1}{2}$ of $\frac{1}{2} + \frac{1}{2}$ of $\frac{1}{2}$; $\frac{1}{3}$ of $\frac{1}{2} + \frac{1}{2}$ of $\frac{1}{2}$ of $\frac{1}{2}$.
 (3) $\frac{1}{2}$ of $\frac{1}{2} + \frac{1}{2}$ of $1\frac{1}{2} + \frac{1}{2}$ of $2\frac{1}{2}$; $\frac{1}{3}$ of $7 + 2\frac{1}{2}$ of $\frac{1}{2}$ of $\frac{1}{2}$.
 (4) $\frac{1}{5}$ of $\frac{1}{2}$ of $2\frac{1}{2} + \frac{1}{2}$ of $6\frac{1}{2}$ of $\frac{1}{2} + 1\frac{1}{2}$ of $\frac{1}{2}$ of $1\frac{1}{2}$.

SUBTRACTION.

(Proper Fractions, with Denominators not exceeding 10.)

Ex. 75.

- | A | B | C | D |
|---------------------------------|---------------------------------|---|---|
| (1) $\frac{1}{2} - \frac{1}{3}$ | (1) $\frac{1}{3} - \frac{1}{4}$ | (1) $\frac{2}{3} + \frac{1}{4} - \frac{1}{2}$ | (1) $\frac{1}{2} - (\frac{1}{3} + \frac{1}{4})$ |
| (2) $\frac{1}{2} - \frac{1}{4}$ | (2) $\frac{2}{3} - \frac{1}{4}$ | (2) $\frac{1}{2} - \frac{1}{3} + \frac{1}{4}$ | (2) $\frac{1}{3} - (\frac{1}{4} - \frac{1}{2})$ |
| (3) $\frac{2}{3} - \frac{1}{4}$ | (3) $\frac{1}{2} - \frac{2}{3}$ | (3) $\frac{1}{2} + \frac{1}{3} - \frac{1}{4}$ | (3) $\frac{1}{2} - (\frac{1}{3} + \frac{1}{4})$ |
| (4) $\frac{1}{2} - \frac{1}{3}$ | (4) $\frac{1}{2} - \frac{1}{4}$ | (4) $\frac{1}{2} - \frac{1}{3} + \frac{1}{4}$ | (4) $\frac{1}{2} - (\frac{1}{3} - \frac{1}{4})$ |
| (5) $\frac{2}{3} - \frac{1}{4}$ | (5) $\frac{1}{2} - \frac{1}{3}$ | (5) $\frac{1}{2} - \frac{1}{3} - \frac{1}{4}$ | (5) $\frac{1}{2} - (\frac{1}{3} + \frac{1}{4})$ |
| (6) $\frac{1}{2} - \frac{1}{3}$ | (6) $\frac{1}{2} - \frac{1}{4}$ | (6) $\frac{1}{2} - \frac{1}{3} - \frac{1}{4}$ | (6) $\frac{1}{2} - (\frac{1}{3} - \frac{1}{4})$ |
- E (1) $\frac{2}{3} - \frac{1}{2} + \frac{1}{3} - \frac{1}{4}$; $\frac{1}{2} + \frac{1}{3} - \frac{1}{4} + \frac{1}{5}$; $\frac{1}{2} - \frac{1}{3} - \frac{1}{4} + \frac{1}{5}$.
 (2) $\frac{1}{2} + \frac{1}{3} - (\frac{1}{4} + \frac{1}{5})$; $\frac{1}{2} - (\frac{1}{3} - \frac{1}{4}) + \frac{1}{5}$; $\frac{1}{2} - (\frac{1}{3} + \frac{1}{4}) - \frac{1}{5}$.
 (3) $(\frac{1}{2} - \frac{1}{4}) + (\frac{1}{3} - \frac{1}{4})$; $\frac{1}{2} - (\frac{1}{3} + \frac{1}{4}) + \frac{1}{5}$; $(\frac{1}{2} - \frac{1}{3}) - (\frac{1}{4} + \frac{1}{5})$.
 (4) $\frac{2}{3} - \frac{1}{2} + \frac{1}{3} - \frac{1}{4} + \frac{1}{5}$; $\frac{1}{2} + \frac{1}{3} - (\frac{1}{4} + \frac{1}{5}) - (\frac{1}{3} - \frac{1}{4})$.
 (5) $\frac{1}{2}$ of $\frac{1}{2} - \frac{1}{2}$ of $\frac{1}{2}$; $\frac{1}{3}$ of $\frac{1}{2} - \frac{1}{2}$ of $\frac{1}{2}$; $\frac{1}{4}$ of $1\frac{1}{2} - \frac{1}{2}$ of $1\frac{1}{2}$.
 (6) $\frac{1}{2}$ of $2\frac{1}{2}$ of $\frac{1}{2} - 1\frac{1}{2}$ of $\frac{1}{2}$ of $\frac{1}{2}$; $\frac{1}{3}$ of $\frac{1}{2}$ of $2\frac{1}{2} - 1\frac{1}{2}$ of $3\frac{1}{2}$ of $\frac{1}{2}$.
- F (1) What is the difference between the greatest and the least of the fractions $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, and $\frac{1}{5}$?
 (2) Find the difference between the sum and difference of $\frac{1}{2}$ and $\frac{1}{3}$.
 (3) What must be added to $\frac{1}{2}$ to make $\frac{1}{3}$?
 (4) From the sum of one-fifth and three-eighths, take three-fifths of one-half.
 (5) Which is the greater, $\frac{1}{2}$ or $\frac{1}{3}$, and by how much?
 (6) One-fourth of an apple is rotten, two-fifths I throw away, and the remainder I eat. What fraction of the apple did I eat?

Examinations in Greatest Common Measure, Least Common Multiple, and Vulgar Fractions.

Ex. 75a.

- A (1) Reduce the fraction $\frac{2}{3} \times \frac{4}{5} \times \frac{6}{7}$ to its lowest terms.
 (2) Find the least number which can be divided by 14, 21, 35, 40, and 45, without a remainder.
 (3) Reduce $\frac{1}{2}$ of $\frac{3}{4}$ of $\frac{5}{6}$ to a simple fraction.
 (4) What is the sum of $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, and $\frac{1}{5}$?
- B (1) Find the G. C. M. and L. C. M. of 3,024, 4,752, and 7,488.
 (2) $7s. 6\frac{3}{4}d. + 9s. 7\frac{1}{2}d. + 3s. 8\frac{3}{4}d. + 11s. 10\frac{1}{2}d. + 15s. 3\frac{1}{4}d. + 18s. 5\frac{1}{2}d.$
 (3) Arrange the fractions $\frac{1}{10}$, $\frac{1}{5}$, $\frac{1}{3}$, and $\frac{1}{2}$, in their order of magnitude.
 (4) Take $\frac{3}{4}$ of $1\frac{1}{2}$ from $\frac{5}{6}$ of $1\frac{1}{4}$.
- C (1) Reduce the fraction $\frac{1}{2} \times \frac{3}{4} \times \frac{5}{6} \times \frac{7}{8}$ to its simplest form.
 (2) What must be added to $\frac{1}{10}$ to give $\frac{1}{5}$?
 (3) $\pounds 49\ 13s. 7\frac{1}{2}d. + \pounds 70\ 12s. 11\frac{3}{4}d. + \pounds 105\ 17s. 9\frac{1}{2}d. + \pounds 319\ 14s. 3\frac{3}{4}d. + \pounds 6\ 18s. 5\frac{1}{2}d.$
 (4) Simplify $3\frac{3}{4}$ of $\frac{5}{6}$ of $\frac{7}{8}$ of 49 of $1\frac{1}{2}$.
- D (1) A schoolmaster divided his scholars, consisting of 221 boys and 143 girls, into the largest possible equal classes, so that each class of boys should number the same as each class of girls. Find the number of classes.
 (2) $\pounds 13\ 16s. 2\frac{1}{2}d. - \pounds 9\ 18s. 9\frac{1}{2}d.$
 (3) From the sum of $\frac{1}{2}$ and $\frac{1}{3}$, take the difference between $\frac{1}{4}$ and $\frac{1}{5}$.
 (4) Six bells ring at intervals of 4, 5, 6, 10, 12, and 15 seconds respectively. At what intervals will they toll together?
- E (1) Arrange in order, from the least to the greatest, the fractions $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{6}$, and $\frac{1}{7}$.
 (2) Express $\frac{1}{10} \times \frac{3}{4} \times \frac{5}{6} \times \frac{7}{8}$ in its lowest terms.
 (3) What must be added to the sum of $\frac{1}{2}$ and $\frac{1}{3}$, to make $\frac{1}{5}$?
 (4) How many apples must be cut up in order to give to each of 19 children one-third of an apple, and what would the apples cost at the rate of 1s. 9d. per dozen?
- F (1) What is the difference between the sum and difference of $\frac{1}{10}$ and $\frac{1}{5}$?
 (2) Simplify $5\frac{1}{2}$ of $3\frac{3}{4}$ of $\frac{1}{2}$ of $3\frac{1}{2}$ of $\frac{1}{4}$ of 8.
 (3) Write the fraction $\frac{1}{10} \times \frac{3}{4} \times \frac{5}{6} \times \frac{7}{8}$ in a simpler form.
 (4) A traveller went $\frac{1}{2}$ of a journey on foot, $\frac{3}{10}$ on horseback, $\frac{1}{4}$ by rail, and the rest by coach. What part did he go by coach?
- G (1) Prove that the fractions $\frac{1}{2} \times \frac{3}{4} \times \frac{5}{6}$ and $\frac{1}{3} \times \frac{2}{3} \times \frac{4}{5}$ are equal.
 (2) Which is the greater, and by how much, $\frac{1}{2}$ lb. or $\frac{1}{3}$ lb.?
 (3) The children in a school can be arranged in classes of 15, 25, 35, or 45. How many children are there in the school?
 (4) Subtract the sum of the greatest and least of the fractions $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, and $\frac{1}{5}$, from the sum of the other two fractions.

VULGAR FRACTIONS.

Ex. 76.

Reduce the following to their Least Common Denominator.

A	B	C	D	E
$\frac{1}{12}$ (1) $\frac{1}{12}, \frac{1}{12}, \frac{1}{12}$ (1) $\frac{1}{12}, \frac{1}{12}, \frac{1}{12}$ (1) $\frac{1}{12}, \frac{1}{12}, \frac{1}{12}$	$\frac{1}{12}$ (2) $\frac{1}{12}, \frac{1}{12}, \frac{1}{12}$ (2) $\frac{1}{12}, \frac{1}{12}, \frac{1}{12}$ (2) $\frac{1}{12}, \frac{1}{12}, \frac{1}{12}$ (2) $\frac{1}{12}, \frac{1}{12}, \frac{1}{12}$	$\frac{1}{12}$ (3) $\frac{1}{12}, \frac{1}{12}, \frac{1}{12}$ (3) $\frac{1}{12}, \frac{1}{12}, \frac{1}{12}$ (3) $\frac{1}{12}, \frac{1}{12}, \frac{1}{12}$ (3) $\frac{1}{12}, \frac{1}{12}, \frac{1}{12}$	$\frac{1}{12}$ (4) $\frac{1}{12}, \frac{1}{12}, \frac{1}{12}$ (4) $\frac{1}{12}, \frac{1}{12}, \frac{1}{12}$ (4) $\frac{1}{12}, \frac{1}{12}, \frac{1}{12}$ (4) $\frac{1}{12}, \frac{1}{12}, \frac{1}{12}$	$\frac{1}{12}$ (5) $\frac{1}{12}, \frac{1}{12}, \frac{1}{12}$ (5) $\frac{1}{12}, \frac{1}{12}, \frac{1}{12}$ (5) $\frac{1}{12}, \frac{1}{12}, \frac{1}{12}$ (5) $\frac{1}{12}, \frac{1}{12}, \frac{1}{12}$

ADDITION.

Ex. 77.

A	B	C	D	E
$\frac{1}{12}$ (1) $\frac{1}{12} + \frac{1}{12}$ (1) $\frac{1}{12} + \frac{1}{12} + \frac{1}{12}$ (1) $\frac{1}{12} + \frac{1}{12} + \frac{1}{12}$ (1) $\frac{1}{12} + \frac{1}{12} + \frac{1}{12}$	$\frac{1}{12}$ (2) $\frac{1}{12} + \frac{1}{12}$ (2) $\frac{1}{12} + \frac{1}{12} + \frac{1}{12}$ (2) $\frac{1}{12} + \frac{1}{12} + \frac{1}{12}$ (2) $\frac{1}{12} + \frac{1}{12} + \frac{1}{12}$	$\frac{1}{12}$ (3) $\frac{1}{12} + \frac{1}{12}$ (3) $\frac{1}{12} + \frac{1}{12} + \frac{1}{12}$ (3) $\frac{1}{12} + \frac{1}{12} + \frac{1}{12}$ (3) $\frac{1}{12} + \frac{1}{12} + \frac{1}{12}$	$\frac{1}{12}$ (4) $\frac{1}{12} + \frac{1}{12}$ (4) $\frac{1}{12} + \frac{1}{12} + \frac{1}{12}$ (4) $\frac{1}{12} + \frac{1}{12} + \frac{1}{12}$ (4) $\frac{1}{12} + \frac{1}{12} + \frac{1}{12}$	$\frac{1}{12}$ (5) $\frac{1}{12} + \frac{1}{12}$ (5) $\frac{1}{12} + \frac{1}{12} + \frac{1}{12}$ (5) $\frac{1}{12} + \frac{1}{12} + \frac{1}{12}$ (5) $\frac{1}{12} + \frac{1}{12} + \frac{1}{12}$

- F (1) Find the sum of, $\frac{1}{12}, \frac{1}{12}, \frac{1}{12}$; and $\frac{1}{12}, \frac{1}{12}, \frac{1}{12}$.
 (2) Find the value of, $\frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12}$.
 (3) To the sum of, $\frac{1}{12}, \frac{1}{12}, \frac{1}{12}$, add $\frac{1}{12}, \frac{1}{12}, \frac{1}{12}$.
 (4) Simplify, $\frac{1}{12} + \frac{1}{12} + \frac{1}{12}$ of $\frac{1}{12} + \frac{1}{12} + \frac{1}{12}$ of $\frac{1}{12} + \frac{1}{12} + \frac{1}{12}$.

SUBTRACTION.

Ex. 78.

A	B	C
(1) $\frac{1}{12} - \frac{1}{12}$	(1) $\frac{1}{12} - \frac{1}{12}$	(1) $\frac{1}{12} - \frac{1}{12}$
(2) $\frac{1}{12} - \frac{1}{12}$	(2) $\frac{1}{12} - \frac{1}{12}$	(2) $\frac{1}{12} - \frac{1}{12}$
(3) $\frac{1}{12} - \frac{1}{12}$	(3) $\frac{1}{12} - \frac{1}{12}$	(3) $\frac{1}{12} - \frac{1}{12}$
(4) $\frac{1}{12} - \frac{1}{12}$	(4) $\frac{1}{12} - \frac{1}{12}$	(4) $\frac{1}{12} - \frac{1}{12}$
(5) $\frac{1}{12} - \frac{1}{12}$	(5) $\frac{1}{12} - \frac{1}{12}$	(5) $\frac{1}{12} - \frac{1}{12}$
(6) $\frac{1}{12} - \frac{1}{12}$	(6) $\frac{1}{12} - \frac{1}{12}$	(6) $\frac{1}{12} - \frac{1}{12}$

D

- (1) $\frac{1}{12} - \frac{1}{12} - \frac{1}{12} - \frac{1}{12} - \frac{1}{12}$
 (2) $\frac{1}{12} - \frac{1}{12} - (\frac{1}{12} + \frac{1}{12} - \frac{1}{12}) + (\frac{1}{12} - 2)$
 (3) $\frac{1}{12} - \frac{1}{12} + \frac{1}{12} - (\frac{1}{12} - \frac{1}{12}) + 2\frac{1}{12}$
 (4) $\frac{1}{12} - \frac{1}{12} + \frac{1}{12} - (\frac{1}{12} - \frac{1}{12}) + 2\frac{1}{12}$
 (5) $\frac{1}{12} - \frac{1}{12} + \frac{1}{12}$ of $\frac{1}{12}$
 (6) $\frac{1}{12} - \frac{1}{12} + \frac{1}{12} - \frac{1}{12} + 8\frac{1}{12}$

- E (1) What is the difference between $\frac{1}{2}$ of 8, and $\frac{1}{3}$ of 9?
 (2) To the difference between $8\frac{1}{2}$ and $3\frac{1}{2}$, add $\frac{1}{2}$ of $\frac{1}{2}$ of $\frac{1}{2}$.
 (3) What number must be added to $3\frac{1}{2}$ to make $5\frac{1}{2}$?
 (4) Find the difference between the sum and difference of $\frac{1}{2}$ of $\frac{1}{2}$, and $\frac{1}{3}$ of $\frac{1}{2}$.
 (5) A person left $\frac{1}{2}$ of his property to his wife, $\frac{1}{3}$ to his elder son, $\frac{1}{4}$ to his younger son, and the remainder to his daughter. Find the daughter's share.
 (6) What fraction must be added to the sum of $31\frac{1}{2}$, $43\frac{1}{2}$, and $47\frac{1}{2}$, to make the result an integer?

MULTIPLICATION.

Ex. 79.

A	B	C	D	E
(1) $\frac{1}{2} \times \frac{1}{3}$	(1) $\frac{1}{2} \times 10$	(1) $110 \times \frac{1}{11}$	(1) $3\frac{1}{2} \times 5\frac{1}{2}$	(1) $20\frac{1}{2} \times 3\frac{1}{2}$
(2) $\frac{1}{3} \times \frac{1}{4}$	(2) $\frac{1}{2} \times 8$	(2) $210 \times \frac{1}{7}$	(2) $4\frac{1}{2} \times 7\frac{1}{2}$	(2) $30\frac{1}{2} \times 3\frac{1}{2} \times \frac{1}{2}$
(3) $\frac{1}{4} \times \frac{1}{5}$	(3) $\frac{1}{2} \times 12$	(3) $540 \times \frac{1}{11}$	(3) $3\frac{1}{2} \times 5\frac{1}{2}$	(3) $4\frac{1}{2} \times 5\frac{1}{2} \times \frac{1}{2}$
(4) $\frac{1}{5} \times \frac{1}{6}$	(4) $\frac{1}{2} \times 14$	(4) $320 \times \frac{1}{11}$	(4) $5\frac{1}{2} \times 3\frac{1}{2}$	(4) $32\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}$
(5) $\frac{1}{6} \times \frac{1}{7}$	(5) $\frac{1}{2} \times 24$	(5) $410 \times \frac{1}{11}$	(5) $4\frac{1}{2} \times 3\frac{1}{2}$	(5) $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}$
(6) $\frac{1}{7} \times \frac{1}{8}$	(6) $\frac{1}{2} \times 22$	(6) $3\frac{1}{2} \times 5$	(6) $9\frac{1}{2} \times 4\frac{1}{2}$	(6) $\frac{1}{2} \times 19\frac{1}{2} \times 3\frac{1}{2}$

- F (1) Simplify, $\frac{2}{3}$ of $\frac{3}{4} \times \frac{1}{2}$; $\frac{1}{2} \times 3\frac{1}{2}$ of $\frac{1}{2}$; $2\frac{1}{2}$ of $3\frac{1}{2} \times \frac{1}{2}$.
 (2) Find the continued product of, $3\frac{1}{2}$, $\frac{1}{2}$, $4\frac{1}{2}$, $\frac{1}{2}$, $9\frac{1}{2}$, $\frac{1}{2}$.
 (3) Find the continued product of, $5\frac{1}{2}$, $\frac{1}{2}$, $30\frac{1}{2}$, $\frac{1}{2}$, $1\frac{1}{2}$, $5\frac{1}{2}$.
 (4) Find the continued product of, $\frac{1}{2}$, $\frac{3}{4}$, $\frac{1}{2}$, $\frac{1}{2}$, $\frac{1}{2}$, $\frac{1}{2}$, $\frac{1}{2}$.
 (5) Multiply, $3\frac{1}{2}$ by $\frac{1}{2}$ of 9, and $2\frac{1}{2}$ by $3\frac{1}{2}$ of $\frac{1}{2}$.
 (6) Multiply, $\frac{2}{3}$ of $\frac{1}{2}$ of $\frac{1}{2}$ by $4\frac{1}{2}$ of $\frac{1}{2}$, and also by $10\frac{1}{2}$ of $3\frac{1}{2}$.

DIVISION.

Ex. 80.

A	B	C	D	E
(1) $\frac{1}{2} \div \frac{1}{3}$	(1) $\frac{1}{2} \div 9$	(1) $9 \div 1\frac{1}{2}$	(1) $3\frac{1}{2} \div 3\frac{1}{2}$	(1) $4\frac{1}{2} \div (7\frac{1}{2} \text{ of } \frac{1}{2})$
(2) $\frac{1}{3} \div \frac{1}{4}$	(2) $3\frac{1}{2} \div 13$	(2) $12 \div 3\frac{1}{2}$	(2) $5\frac{1}{2} \div 4\frac{1}{2}$	(2) $2\frac{1}{2} \div (5\frac{1}{2} \text{ of } \frac{1}{2})$
(3) $\frac{1}{4} \div \frac{1}{5}$	(3) $4\frac{1}{2} \div 18$	(3) $13 \div 4\frac{1}{2}$	(3) $3\frac{1}{2} \div 5\frac{1}{2}$	(3) $1\frac{1}{2} \div (3\frac{1}{2} \text{ of } \frac{1}{2})$
(4) $\frac{1}{5} \div \frac{1}{6}$	(4) $5\frac{1}{2} \div 7$	(4) $18 \div 3\frac{1}{2}$	(4) $2\frac{1}{2} \div 9\frac{1}{2}$	(4) $\frac{1}{2} \div 4\frac{1}{2} \times 8$
(5) $\frac{1}{6} \div \frac{1}{7}$	(5) $3\frac{1}{2} \div 9$	(5) $26 \div 3\frac{1}{2}$	(5) $20\frac{1}{2} \div 4\frac{1}{2}$	(5) $3\frac{1}{2} \div 57 \times 12$
(6) $1\frac{1}{2} \div 3\frac{1}{2}$	(6) $4\frac{1}{2} \div 51$	(6) $19 \div 4\frac{1}{2}$	(6) $13\frac{1}{2} \div 5\frac{1}{2}$	(6) $19\frac{1}{2} \div 1\frac{1}{2} \times 1\frac{1}{2}$

- F (1) Simplify, $\frac{3\frac{1}{2}}{15}$; $\frac{4\frac{1}{2}}{36}$; $\frac{7\frac{1}{2}}{72}$; $\frac{12\frac{1}{2}}{2\frac{1}{2}}$; $\frac{9\frac{1}{2}}{6\frac{1}{2}}$; $4\frac{1}{2} \left(\frac{5\frac{1}{2}}{1\frac{1}{2}} \right)$
 (2) Simplify, $\frac{14}{4\frac{1}{2}}$; $\frac{15}{\frac{1}{2} \text{ of } 5}$; $\frac{23}{\frac{1}{2} \text{ of } 9}$; $\frac{2\frac{1}{2}}{1\frac{1}{2} \text{ of } 3}$; $6 \div \frac{5\frac{1}{2}}{3\frac{1}{2}}$
 (3) Simplify, $(\frac{1}{2} \text{ of } \frac{1}{2} \text{ of } \frac{1}{2} \times 2\frac{1}{2} \times 2\frac{1}{2}) \div (1\frac{1}{2} \text{ of } 3\frac{1}{2} \text{ of } \frac{1}{2} \text{ of } 1\frac{1}{2} \times 3\frac{1}{2})$
 (4) Simplify, $(1\frac{1}{2} \text{ of } 3\frac{1}{2} \times 2\frac{1}{2} \text{ of } 4\frac{1}{2}) \div (3\frac{1}{2} \text{ of } 5\frac{1}{2} \text{ of } \frac{1}{2} \times \frac{1}{2} \text{ of } 2\frac{1}{2})$
 (5) Simplify, $(\frac{1}{2} \text{ of } \frac{1}{2} \text{ of } \frac{1}{2} \text{ of } \frac{1}{2} \times 2\frac{1}{2}) \div (4\frac{1}{2} \text{ of } \frac{1}{2} \times 1\frac{1}{2} \text{ of } \frac{1}{2} \text{ of } \frac{1}{2})$
 (6) Simplify, $(1\frac{1}{2} \text{ of } 3\frac{1}{2} \text{ of } \frac{1}{2} \times 16) \div (3\frac{1}{2} \times 4\frac{1}{2} \times \frac{1}{2} \text{ of } 3\frac{1}{2})$

Simplify,—

Ex. 81.

A (1) $\frac{\frac{1}{2} + \frac{1}{3} + \frac{1}{4}}{\frac{2}{3} \text{ of } \frac{2}{3}}$

B (1) $\frac{2\frac{1}{2} - \frac{3}{4} + \frac{5}{8}}{\frac{2}{3} \text{ of } 9}$

C (1) $\frac{9\frac{3}{4} \times \frac{1}{2} \text{ of } (2\frac{1}{2} - \frac{5}{8})}{\frac{2\frac{1}{2} \div 3}{\frac{1}{2}}}$

(2) $\frac{\frac{1}{2} \text{ of } \frac{2}{3} - \frac{1}{4}}{\frac{1}{3} \text{ of } \frac{2}{3}}$

(2) $\frac{2\frac{1}{2} - (\frac{3}{4} \text{ of } 4)}{4 \div (\frac{1}{2} - \frac{1}{3})}$

(2) $\frac{(3\frac{3}{4} + 1\frac{1}{2}) \text{ of } (1\frac{1}{2} - \frac{1}{4})}{\frac{1\frac{1}{2} \text{ of } \frac{2}{3}}{9}}$

(3) $\frac{2\frac{1}{2} + \frac{5}{8} \text{ of } 2}{2 \div 3\frac{1}{2}}$

(3) $\frac{3\frac{1}{2} - (2\frac{1}{2} - \frac{1}{4})}{\frac{1}{3} \times (\frac{2}{3} \div \frac{1}{2})}$

(3) $\frac{(2\frac{1}{2} - \frac{3}{4}) \div (1\frac{1}{2} \times \frac{1}{4})}{2\frac{3}{4} \div 11}$

(4) $\frac{21\frac{1}{2} - 3\frac{1}{2} \times 4}{5 \div 2\frac{3}{4}}$

(4) $\frac{1\frac{1}{2} + (1\frac{1}{2} \div 9)}{\frac{3\frac{1}{2}}{7}}$

(4) $\frac{3\frac{1}{2} \text{ of } 1\frac{1}{2} + 2\frac{1}{2} \text{ of } 3}{\frac{2\frac{1}{2} + \frac{5}{8} \div \frac{1\frac{1}{2} - \frac{3}{4}}{\frac{1}{2}}}$

Simplify,—

D

(1) $\frac{\frac{1}{2} \text{ of } 2\frac{1}{2} + \frac{2}{3} \text{ of } \frac{1}{2}}{\frac{2\frac{1}{2}}{2\frac{3}{4} \div [\frac{1}{2} \text{ of } (2\frac{1}{2} + \frac{1}{3})]}}$

(2) $\frac{(1\frac{1}{2} + 5\frac{1}{2}) \div 3\frac{1}{2}}{\frac{\frac{1}{2} + \frac{1}{3}}{\frac{3}{8} + \frac{1}{2} \div \frac{1}{4}}}$

(3) $\frac{(\frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5}) \div 16}{(\frac{3}{2} \text{ of } \frac{1}{2}) \div (\frac{3}{2} \text{ of } \frac{1}{16})}$

(4) $\frac{7\frac{1}{2} + 3\frac{1}{2}}{1\frac{1}{2} - \frac{3}{8}} + \frac{5\frac{1}{2} - 3\frac{3}{4}}{1\frac{1}{2} - \frac{3}{4}} - \frac{5}{8}$

E

(1) $\frac{\frac{2\frac{1}{2} \text{ of } \frac{1}{2}}{9}}{\frac{9}{8} \div \frac{1\frac{1}{2} \text{ of } 6}{\frac{1\frac{1}{2} \text{ of } 3\frac{1}{2}}{9}} \times \frac{1\frac{1}{2} \text{ of } \frac{1}{16}}{\frac{2\frac{3}{4}}{2\frac{1}{2} + \frac{1}{2}}}$

(2) $\frac{\frac{3\frac{1}{2} \div \frac{1}{2}}{9}}{\frac{1}{2} + \frac{1}{2} + \frac{1}{8}} \text{ of } \frac{\frac{2\frac{1}{2} \text{ of } 3\frac{1}{2} \text{ of } \frac{1}{16} \text{ of } \frac{1}{2}}{7}}{\frac{\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}}{7}}$

(3) $\frac{2}{4 + \frac{6}{2 + 3\frac{3}{4}}} \div 1\frac{1}{2}$

(4) $\frac{1}{3\frac{1}{2} \text{ of } \frac{1}{16} \text{ of } \frac{4}{2\frac{1}{2} + \frac{3}{2} + \frac{3}{2 + 3\frac{1}{2} + \frac{1}{2}}}}$

Ex. 82.

Find the value of,—

A

- (1) $\frac{3}{8}, \frac{2}{3}, \frac{1}{4}, \frac{1}{5}$ and $\frac{2}{3}$ of £1.
 (2) $\frac{1}{16}$ of $\frac{3}{8}$ of £10.
 (3) $\frac{1}{4}$ of $\frac{3}{8}$ of 13 guineas.
 (4) $\frac{1}{2}$ of $\frac{1}{4}$ of $\frac{1}{8}$ of $\frac{1}{4}$ of £2.

B

- (1) $\frac{2}{3}$ of $\frac{2}{3}$ of $\frac{1}{2}$ of a crown.
 (2) $\frac{1}{3}$ of $\frac{1}{4}$ of £3 6s. 8d.
 (3) $\frac{1}{3}$ of $\frac{1}{4}$ of $\frac{1}{16}$ of £16.
 (4) $2\frac{1}{2}$ of $\frac{1}{4}$ of $\frac{2}{3}$ of $\frac{1}{8}$ of half-a-crown.

Find the value of,—

- | | |
|--|--|
| C | D |
| (1) $\frac{3}{8}$ of $\frac{1}{4}$ of $6\frac{1}{2}$ of £28 10s. | (1) $\frac{1}{8}$ of $\frac{1}{8}$ of $\frac{1}{8}$ of 8 weeks |
| (2) $\frac{1}{12}$ of a ton; $\frac{1}{12}$ of 7 cwt. | (2) $\frac{3}{8}$ of $5\frac{1}{8}$ of 8 miles |
| (3) $\frac{3}{8}$ of a pound (troy); $\frac{1}{8}$ of a mile | (3) $\frac{1}{16}$ of a mile; $\frac{1}{8}$ of 2 furlongs |
| (4) $\frac{1}{4}$ of $\frac{1}{2}$ of $\frac{1}{4}$ of $\frac{1}{2}$ of 12 qr. wheat | (4) $\frac{1}{16}$ of 6 oz. (troy); $\frac{1}{4}$ of 7 acres |
| E | F |
| (1) $\frac{7}{8}$ qr. cloth; $\frac{1}{2}$ qr. corn; $\frac{1}{4}$ qr. sugar | (1) $\frac{3}{8}$ of £20 18s. 4d.; $\frac{1}{8}$ of £325 |
| (2) $\frac{1}{8}$ of 4 cub. yds.; $\frac{1}{8}$ ser.; $\frac{1}{8}$ qt. beer | (2) $\frac{1}{8}$ of $\frac{1}{2}$ of £220 16s. 8d. |
| (3) $\frac{1}{8}$ of 12 stones; $\frac{1}{8}$ of 2 tons 10 cwt. | (3) $\frac{1}{8}$ of $\frac{1}{4}$ of $\frac{1}{2}$ of £18 18s. 4d. |
| (4) $\frac{1}{4}$ of 12 lbs. 4 oz. (avoir.) | (4) $\frac{1}{8}$ of $\frac{1}{2}$ of $\frac{1}{2}$ of $\frac{1}{2}$ of 4 tons |

Ex. 83.

What fraction is,—

- | | |
|--|-------------------------------------|
| A | B |
| (1) 16s.; 3s. 4d.; 2s. 6d.; 7s. 6d.; 1s. 3d. of £1 | (1) 3s. 8d. of 10s.; 5s. 4d. of £64 |
| (2) 1s. 4d.; 9d.; 8d.; 2s. 6d. of £2 | (2) £24 2s. 6d. of £96 10s. |
| (3) 3½d.; 4¾d.; 8½d.; 6½d. of 1s. | (3) £33 6s. 8d. of £1,000 |
| (4) 2s. 9d. of 5 crowns; 3s. 2d. of 10s. 4d. | (4) 1 qt. 1 pt. of a gallon |
| C | D |
| (1) 240 yds. of a mile? 10 ft. of a mile? | (1) 3 qrs. 1 nl. of 12 yards? |
| (2) $\frac{3}{4}$ of $\frac{1}{4}$ of $\frac{1}{8}$ of $\frac{3}{4}$ of £3 15s.? | (2) 2 lbs. 14 oz. of 3 tons? |
| (3) 2 rods 10 poles of 4 acres? | (3) 3 cub. ft. of 320 cub. yds.? |
| (4) 3 hrs. 10 min. of 3 weeks? | (4) 2 ft. 3 in. of 3 miles? |

Reduce,—

Reduce,—

- | | |
|--|--|
| E | F |
| (1) $\frac{1}{2}$ of $\frac{1}{2}$ of £1 to the frac. of £5 10s. | (1) 5 bus. 3 pks. to the frac. of 1 load |
| (2) $\frac{3}{4}$ of $\frac{1}{2}$ of 5s. „ 10s. | (2) 2 pints 1 gill „ 1 gal. |
| (3) 2 lbs. 3 oz. 15 drs. „ 1 cwt. | (3) $\frac{3}{8}$ of a day „ $\frac{1}{8}$ yr. |
| (4) 1 yd. 2 ft. 3 in. „ 1 mile | (4) 3 sq. yds. 8 sq. ft. „ 2 ac. |

EXAMINATIONS IN VULGAR FRACTIONS.

Ex. 84.

- A (1) What number added to $\frac{1}{2}$ will give $1\frac{1}{2}$?
- (2) What number must be added to $3\frac{3}{4}$ to give $3\frac{1}{2}$?
- (3) The difference between two fractions is $\frac{1}{8}$; if the larger fraction were doubled, the difference between the two would be $\frac{3}{8}$; what are the fractions?
- (4) What is the difference between $\frac{3}{4}$ of $5\frac{1}{2}$, and $22\frac{3}{4}$?
- B (1) To $\frac{3}{4}$ add $1\frac{1}{2}$, from the sum take away $\frac{1}{8}$, multiply the difference by $\frac{1}{8}$, and divide the product by $\frac{1}{8}$; what is the quotient?
- (2) What fraction taken from $3\frac{1}{2}$ will leave the remainder $2\frac{1}{2}$ of $\frac{1}{2}$?
- (3) What fraction must be multiplied by $\frac{1}{8}$ to give $\frac{1}{2}$?
- (4) What fraction must be multiplied by $\frac{3}{8}$ to give $3\frac{1}{4}$?

- C** (1) What fraction must be multiplied by $3\frac{1}{2}$ to give $\frac{1}{4}$?
 (2) Divide $4\frac{1}{2}$ by $3\frac{1}{2}$, and multiply the quotient by $2\frac{1}{4}$.
 (3) Reduce $\frac{11}{18}$ to its lowest terms, and then divide it by $\frac{1}{18}$.
 (4) What fraction of a yard is $\frac{3}{4}$ of an inch?
- D** (1) What fraction of a foot is $\frac{1}{4}$ of a yard?
 (2) Reduce $2s. 6\frac{1}{2}d.$ to the fraction of £.
 (3) If a yard of silk cost $4\frac{3}{4}s.$, what will be the cost of half a foot?
 (4) If $\frac{5}{8}$ of a ship be worth £7,050, what is the whole of it worth?
- E** (1) If an ounce of tea cost $3\frac{3}{4}d.$, what will be the cost of $4\frac{1}{2}$ lbs.?
 (2) Find the difference in inches between $\frac{1}{3}$ of 14 yards and $\frac{2}{3}$ of 6 feet.
 (3) How many sixths are there in $40\frac{1}{2}$?
 (4) If $\frac{3}{4}$ of $\frac{1}{2}$ of a ship be worth £8,250, what is the worth of $\frac{1}{4}$ of it?
- F** (1) From $\frac{1}{4}$ of £1 take $8s. 8d.$, and reduce the remainder to the fraction of £1.
 (2) From $\frac{1}{4}$ of $2s. 6d.$ take $\frac{1}{8}$ of a penny, and reduce the remainder to the fraction of a crown.
 (3) Divide £7 $\frac{1}{2}$ equally among 68 persons.
 (4) After taking out of a purse $\frac{1}{3}$ of its contents, $\frac{1}{4}$ of the remainder was found to be £2 10s.; what did the purse contain at first?
- G** (1) Find the continued product of the sum, difference, and product of $\frac{1}{2}$ and $\frac{3}{4}$.
 (2) Divide the sum of $\frac{1}{2}$ and $\frac{3}{4}$ by their product.
 (3) What fraction of $1s. 6d.$ is $\frac{1}{2}$ of $4s. 1d.$?
 (4) Divide the greater of the following fractions, $\frac{1}{2}$ and $\frac{1}{3}$, by the less, and multiply the quotient by $\frac{1}{4}$.
- H** (1) If $\frac{1}{3}$ of an acre can be mowed by 30 men in 10 minutes, in what time can they mow 7 acres?
 (2) Divide £1 among 1 man 2 women and 3 children, a man receiving twice as much as a woman, and a woman twice as much as a child.
 (3) One-eighth of a number is 48; what is the number?
 (4) A man who owns $\frac{1}{4}$ of a coal-mine sells for £3,000 one-tenth of his share; what is the whole mine worth?
- I** (1) If $\frac{3}{8}$ of a business can be bought for £660, what fraction of the business can be bought for £156?
 (2) A ship is worth £20,000, and a gentleman owns $\frac{1}{4}$ of $1\frac{1}{2}$ of it; what is the worth of his share?
 (3) The width of a river is 75 feet; what fraction is that of a mile?
 (4) If $\frac{1}{4}$ of an ounce of gold be worth £2 10s., what is the value of $\frac{1}{16}$ ounce?

- J** (1) Divide $8\frac{1}{2}$ by $12\frac{3}{4}$, and multiply the quotient by $2\frac{3}{4}$.
 (2) From $\frac{3}{8}$ of a penny take $\frac{1}{2}$ of a farthing, and reduce the remainder to the fraction of a crown.
 (3) To $\frac{3}{4}$ of sixpence add $2\frac{3}{4}$ crowns, and reduce the sum to the fraction of half-a-sovereign.
 (4) How many ninths are there in $26\frac{1}{2}$?
- K** (1) $\frac{2}{3}$ of $\frac{1}{2}$ of a certain number is 90 more than $\frac{2}{3}$ of $\frac{1}{3}$ of that number; find the number.
 (2) $\frac{1}{2} + \frac{1}{3}$ of a certain number is 45 more than $\frac{1}{10}$ of that number; find the number.
 (3) Multiply $1\frac{1}{2}$ by $\frac{1}{3}$, and to the product add $\frac{1}{10}$; then divide this sum by $14\frac{3}{8}$.
 (4) What fraction of 10s. must be added to 2s. 6d. to make the sum $\frac{1}{2}$ of 15s.?
- L** (1) What fraction of £2 6s. 8d. is $\frac{1}{12}$ of 10s.?
 (2) Reduce $\frac{9}{11}$ to a fraction whose numerator is 11.
 (3) Reduce $\frac{7}{14}$ to a fraction whose numerator is 14.
 (4) Reduce $\frac{3}{8}$ to a fraction whose denominator is 18.
- M** (1) What number is that whose fifth exceed its sixth part by 1?
 (2) A man left one-half of his money to his son, one-sixth to a friend, one-fourth to his servants, and the remainder, £2,400, to different charities; what was he worth?
 (3) Divide £7 among three persons, *A*, *B* and *C*; *A* receives half of what *B* receives, and *B* half of what *C* receives; how much each?
 (4) From $\frac{5}{8}$ of £160 13s. 4d. take $\frac{1}{10}$ of £90 7s. 6d.
- N** (1) Of what sum of money is 5s. 6d. the five-sixths?
 (2) Add together, $\frac{2}{3}$ of $9\frac{1}{2}$ and $3\frac{1}{2}$ of $\frac{1}{12}$.
 (3) One-fourth of a post is painted black, $\frac{1}{3}$ is painted white, and the remainder, 36 feet, is painted red: what is the length of the post?
 (4) One-eighth of a field is sown with wheat, one-sixth with oats, one-fourth with barley, and the remainder, 300 square yards, is hay grass; what is the size of the field?
- O** (1) Multiply the third of £40 3s. by the sixth of $\frac{4}{5}$ of $\frac{1}{3}$.
 (2) Multiply the sum of $3\frac{1}{2}$ and $\frac{1}{10}$ by the difference between $\frac{1}{2}$ and $\frac{1}{3}$.
 (3) If one man can mow an acre in 12 hours, and another man in 9 hours, in what time can they do it together?
 (4) Divide £300 $\frac{1}{10}$ equally among 15 men; what will each receive?

- P** (1) If $\frac{5}{8}$ of a yard of cloth cost 2s., what will $4\frac{1}{2}$ French ells cost?
- (2) In a school of six classes there are $\frac{1}{10}$ of the scholars in the first class, $\frac{1}{5}$ in the second, $\frac{1}{4}$ in the third, $\frac{1}{3}$ in the fourth, $\frac{1}{2}$ in the fifth, and 50 in the sixth; how many scholars are there in the school?
- (3) If $\frac{3}{4}$ of a cwt. of sugar cost 14s., what will be the cost of $\frac{1}{8}$ of a lb.?
- (4) At an election $\frac{5}{8}$ of the voters voted for the successful candidate, $\frac{1}{4}$ for the unsuccessful one, and 500 did not vote at all; how many persons were entitled to vote?
- Q** (1) How many more threepenny-pieces are there in £21 than in $3\frac{1}{2}$ half-guineas?
- (2) If $\frac{1}{3}$ of a ship be worth £1,200, what will be the worth of the share of a person who owns $\frac{1}{6}$ of it?
- (3) *A* can mow a field in 10 days, *B* in 12 days, and *C* in 15 days. *A* and *B* work at it for 5 days, and then *C* finishes it. If £10 be paid for the labour, what will each person receive according to the amount of work done?
- (4) (a) What fraction of a mile is $\frac{3}{4}$ of an inch?
 (b) What will be the cost of $3\frac{1}{2}$ lbs. of tea, when an ounce can be bought for $1\frac{1}{2}d.$?
- R** (1) $\frac{1}{2}$ of $\frac{1}{3}$ of a certain number is 30 more than $\frac{1}{4}$ of $\frac{1}{5}$ of the same number; what is the number?
- (2) After spending a sixth of the money in my purse, I have thirty shillings left; what had I at first?
- (3) A man owns two-thirds of a mine, and sells two-thirds of his share for £1,600; what is the worth of the mine?
- (4) Alfred owed Robert $\frac{3}{4}$ of the amount that Robert owed Charles, and, to settle matters, Robert gave 10d. to Alfred, who then paid Charles; what did Robert owe Charles?
- S** (1) If $1\frac{1}{2}$ yards of silk cost 10s. 6d., express the price of $75\frac{1}{2}$ yards as the fraction of £28 14s.
- (2) Prove that a fraction is not altered in value by multiplying its numerator and denominator by the same quantity.
- (3) A man left his son one-third of his property, each of his four daughters one-seventh, and the remaining £500 he left in legacies and charity; what was his whole property worth?
- (4) *A* can make a coat in 25 hours; he works at it alone for 10 hours, and then *B* assists him, and they finish it in 5 hours; in what time could *B* make the coat alone?

- T** (1) Divide £2,000 among four persons. The first receives half as much as the second, the second $\frac{1}{2}$ as much as the third, and the fourth receives £400.
- (2) What fraction of £20 10s. is $\frac{1}{8}$ of half-a-sovereign?
- (3) Of what sum of money is 4s. 7d. the five-nineteenths?
- (4) What fraction must be added to the sum of $3\frac{1}{2}$, $4\frac{1}{2}$, $5\frac{1}{2}$ and $\frac{1}{8}$ to make the result a whole number?
- U** (1) How many ninths of an apple are there in $9\frac{1}{8}$ apples?
- (2) What is the least number which when divided by 10, 15, 30, 45 and 75 will leave the remainder 4?
- (3) Reduce $3\frac{7}{8}$ to a fraction having a denominator 64.
- (4) If a man can do a piece of work in 20 days, what fraction of it will he do in 4 days? and what fraction in 12 hours? working 12 hours a day.
- V** (1) If a man can mow $\frac{1}{8}$ of a field in 20 days of 16 hours each, and he mows at the rate of $\frac{1}{2}$ acre in an hour, how large is the field?
- (2) A mows a field in 10 days, B in 12 days, and C in 15 days; in what time will they together mow $\frac{5}{8}$ of the field?
- (3) A cistern is emptied by one pipe in an hour, and filled by another in 50 minutes. If the two pipes are kept running together, in what time will the cistern be filled?
- (4) Out of 1,300 votes at an election the successful candidate obtained one-sixth more than the unsuccessful one; how many had each?
- W** (1) Divide £900 among 6 men, 4 women and 4 children; a woman receiving half as much as a man, and a child half as much as a woman.
- (2) What is the product of the sum and difference of $\frac{3}{8}$ and $\frac{1}{4}$?
- (3) Divide the sum of the following two fractions by their difference, $\frac{1}{4}$ and $\frac{1}{8}$.
- (4) What number multiplied by $3\frac{3}{4}$ of $5\frac{1}{4}$ gives 240?
- X** (1) A man is able to pay $\frac{1}{2}$ of $\frac{3}{4}$ of $\frac{2}{3}$ of his debts; how much is that in the pound sterling?
- (2) What number is that to which if we add $\frac{2}{3}$ of 27 the sum will be $\frac{1}{4}$ of 216?
- (3) If $\frac{2}{3}$ of a piece of land can be bought for £480, for how much can $\frac{1}{4}$ of it be bought?
- (4) What fraction of a mile is three-eighths of a yard?
- Y** (1) Subtract $4\frac{1}{2}$ from $7\frac{1}{2}$ without reducing the mixed numbers to improper fractions, and add together $\frac{1}{2}$ of $\frac{1}{3}$ of $\frac{7}{9}$ and $\frac{1}{2}$ of $\frac{1}{3}$ of $\frac{4}{6}$.
- (2) Simplify the following,—
- (a) $6\frac{1}{2} + 4\frac{1}{10} + 5\frac{1}{12} + 3\frac{1}{18} + 2\frac{1}{12}$ (c) $\frac{1}{2}$ of $9\frac{1}{2}$ of $3\frac{1}{2}$ of 8
- (b) $4\frac{1}{2} + 5\frac{1}{8} - 3\frac{1}{2} + 11\frac{1}{12} - 13 + 6\frac{1}{2}$ (d) $\frac{9\frac{1}{2} \text{ of } \frac{1}{12}}{6\frac{1}{10} \text{ of } \frac{1}{8}} + \frac{6\frac{1}{2} \text{ of } \frac{1}{12}}{4\frac{1}{2} \text{ of } 2\frac{1}{12}}$

(3) Simplify,—

(a) $11\frac{1}{2} + 12\frac{1}{4} + 17\frac{1}{8}$ (b) $(4\frac{1}{2} + 5\frac{1}{3}) \div (10\frac{1}{3} + 2\frac{1}{6})$

(c) $5\frac{1}{3} + 3\frac{2}{3} - 8\frac{1}{3} + 7\frac{2}{3} - 4\frac{1}{3}$

(4) (a) If my share of a picture was $\frac{1}{3}$ s, and I received £12 3s. 4 $\frac{1}{2}$ d., what was the picture worth?

(b) If my portion were £12 7s. 6d. out of £34 7s. 6d., what fraction of the whole was my share equal to?

Z (1) A had a sum of money of which he paid away $\frac{1}{3}$, then $\frac{1}{4}$ of the remainder, then $\frac{2}{3}$ of what was still left, and found that he had then 1s. less than $\frac{1}{4}$ of $\frac{2}{3}$ of the whole; what sum had he at first?(2) Which is the greater, $\frac{1}{3}$ of 8, or $\frac{1}{3}$ of 9, and by how much?

Simplify, $\frac{1}{3} - \frac{2\frac{1}{2}}{9} + \frac{3\frac{2}{3}}{2} + \frac{1}{4}$

(3) After payment of one-half of a debt, it is found that $\frac{2}{3}$ of what is still due is a sovereign; what was the debt?(4) Simplify, $\frac{2\frac{1}{2} - \frac{2}{3} \text{ of } 1\frac{1}{3}}{\frac{1}{3} \text{ of } 3\frac{1}{3} + \frac{1}{3}}$; and $\frac{2}{3 - \frac{4}{5 + \frac{1}{3}}}$

Ex. 85.

A (1) Reduce to its lowest terms, $\frac{1}{2} \times \frac{4}{5}$; to a mixed number, $\frac{2\frac{1}{3} - 1\frac{1}{3}}{1\frac{1}{3} \text{ of } 1\frac{1}{3}}$; and to a simple fraction, $\frac{2\frac{1}{3} - 1\frac{1}{3}}{1\frac{1}{3} \text{ of } 1\frac{1}{3}}$ (2) Simplify, $\frac{1}{3}$ of $\frac{1}{2} \times \frac{1}{2}$ of $68 \times \frac{1}{12} \times \frac{1}{3}$ of $81 \times \frac{1}{2}$ of $\frac{1}{3} \div \frac{1}{3}$.(3) Find the value of,—
 $\frac{1}{3} (6\frac{2}{3} + 2\frac{1}{3}) \text{ £} + \frac{2\frac{1}{2} - \frac{2}{3} \text{ of } 1\frac{1}{3}}{\frac{1}{3} \text{ of } 3\frac{1}{3} + \frac{1}{3}}$ of $\frac{1}{3}$ of a crown.

(4) Standard gold contains 12 parts of pure gold to one part of copper, and 20 lbs. troy are coined into 934 sovereigns and a half-sovereign; find the weight of pure gold in a sovereign.

B (1) Find the value of, $1\frac{1}{2}$ of £1 + $\frac{1}{4}$ of £78 1s. 2d - $12\frac{1}{2}$ of 2s. 6d.(2) If a certain man walk $2\frac{1}{2}$ miles in 40 minutes, taking exactly a yard each step, in what time will another man walk $4\frac{1}{2}$ miles whose stride is 40 inches, but who only takes 21 steps while the former takes 22?(3) Prove that the following fractions are equal to each other, $\frac{1}{2} \times \frac{1}{3} \times \frac{1}{4}$ and $\frac{1}{24}$.

(4) A cistern has two feeding pipes, one of which can fill it in 5 minutes, and the other in 6 minutes; and also a relief pipe which can empty it in 8 minutes. Supposing the two feeding pipes to run a minute and a half before the relief pipe is opened, how long will it take to fill the cistern?

DECIMAL FRACTIONS.

Ex. 86.

Express the following as Decimal Fractions.

A	B	C	D	E	F
(1) $\frac{1}{10}$	(1) $\frac{1}{1000}$	(1) $\frac{1}{2}$	(1) $\frac{1}{100}$	(1) $\frac{1}{100000000}$	(1) $\frac{1}{100}$
(2) $\frac{1}{100}$	(2) $\frac{1}{1000}$	(2) $\frac{1}{10}$	(2) $\frac{1}{100}$	(2) $\frac{1}{100}$	(2) $\frac{1}{100}$
(3) $\frac{1}{100}$	(3) $\frac{1}{1000}$	(3) $\frac{1}{100}$	(3) $\frac{1}{100000000}$	(3) $\frac{1}{100}$	(3) $\frac{1}{100}$
(4) $\frac{1}{100}$	(4) $\frac{1}{100000}$	(4) $\frac{1}{100}$	(4) $\frac{1}{100}$	(4) $\frac{1}{100}$	(4) $\frac{1}{1000}$
(5) $\frac{1}{100}$	(5) $\frac{1}{100}$	(5) $\frac{1}{100}$	(5) $\frac{1}{100}$	(5) $\frac{1}{100}$	(5) $\frac{1}{100}$
(6) $\frac{1}{1000}$	(6) $\frac{1}{100000}$	(6) $\frac{1}{100}$	(6) $\frac{1}{100}$	(6) $\frac{1}{100}$	(6) $\frac{1}{100}$

Ex. 87.

Express the following as Vulgar Fractions.

A	B	C	D	E	F
(1) $\cdot 1$	(1) $\cdot 2$	(1) $\cdot 25$	(1) $\cdot 105$	(1) $6\cdot 8$	(1) $\cdot 0015$
(2) $\cdot 01$	(2) $\cdot 03$	(2) $\cdot 025$	(2) $\cdot 016$	(2) $7\cdot 04$	(2) $\cdot 000125$
(3) $\cdot 001$	(3) $\cdot 004$	(3) $\cdot 037$	(3) $\cdot 625$	(3) $32\cdot 05$	(3) $\cdot 003125$
(4) $\cdot 0001$	(4) $\cdot 5$	(4) $\cdot 09$	(4) $\cdot 125$	(4) $5\cdot 06$	(4) $\cdot 0875$
(5) $\cdot 00001$	(5) $\cdot 05$	(5) $\cdot 347$	(5) $\cdot 75$	(5) $3\cdot 009$	(5) $\cdot 015625$
(6) $\cdot 000001$	(6) $\cdot 005$	(6) $\cdot 24$	(6) $\cdot 3125$	(6) $4\cdot 125$	(6) $\cdot 0375$

Ex. 88.

Add together the following.

- A** (1) $2 + 3\cdot 1 + 4\cdot 125 + 7\cdot 3125 + 8\cdot 0005 + 325 + \cdot 127$.
 (2) $240\cdot 1 + 3\cdot 05 + 4\cdot 026 + 5\cdot 314 + 71\cdot 005 + \cdot 00275 + \cdot 0213$.
 (3) $56\cdot 03 + 20\cdot 145 + 3\cdot 02 + \cdot 00163 + 5\cdot 24 + \cdot 00175 + 3214$.
 (4) $5\cdot 03 + 3\cdot 064 + 8\cdot 09 + 82\cdot 015 + \cdot 00162 + \cdot 01 + 3\cdot 165$.
- B** (1) $2\cdot 04 + 5\cdot 1123 + \cdot 00132 + 5\cdot 214 + 4\cdot 06 + 52\cdot 35 + 1\cdot 1$.
 (2) $41\cdot 021 + 3\cdot 164 + \cdot 00001 + 3\cdot 1572 + 4\cdot 068 + 3\cdot 0001756$.
 (3) $2\cdot 0141 + 5\cdot 068 + 3\cdot 002 + 259\cdot 1 + 34\cdot 006 + \cdot 001375$.
 (4) $2\cdot 1368 + \cdot 0012 + \cdot 01 + 34\cdot 156 + 2\cdot 017 + 3\cdot 12$.
- C** (1) $5\cdot 021 + \cdot 003 + \cdot 1357 + 24\cdot 12 + 34\cdot 1562 + 341\cdot 2$.
 (2) $7\cdot 125 + 3\cdot 125 + 1\cdot 5625 + 4\cdot 3125 + 781\cdot 4 + 861\cdot 29$.
 (3) $3\cdot 045 + \cdot 1523 + 341\cdot 006 + \cdot 00065 + 2\cdot 150625$.
 (4) $5\cdot 1234 + \cdot 0565 + \cdot 0000012 + 3214 + 5625 + 4\cdot 1$.
- D** (1) $24 + 36 + 2\cdot 00101 + 10\cdot 10121 + 100\cdot 001 + 1,000\cdot 01021$.
 (2) $14\cdot 12 + 3\cdot 00006 + 410\cdot 18065 + 3\cdot 0101 + 5\cdot 20121$.
 (3) $13\cdot 14 + 5\cdot 0123 + 6\cdot 01234 + 5\cdot 0001 + 240\cdot 102$.
 (4) $341\cdot 1 + 6\cdot 012 + 3,000\cdot 0002 + 100\cdot 4 + 50\cdot 2167$.

Ex. 89.

Subtract,—

A		B	
(1)	·01 from 2	(1)	24·36 from 576·241
(2)	1·001 „ 1·1	(2)	1·281 „ 88·3566
(3)	2·101 „ 8·0001	(3)	5·13864 „ 8·2101
(4)	·0132 „ 1·101	(4)	·28641 „ 186·8214

C		D	
(1)	204·0165 from 500	(1)	341·2168 from 520·1
(2)	34·20161 „ 40·12	(2)	33·10986 „ 87·201
(3)	5·90178 „ 8·204	(3)	1·65047 „ 11·205
(4)	56·197 „ 60·304	(4)	55·000138 „ 70·1

E		F	
(1)	520·90683 from 736	(1)	869·0001 from 1,000·2
(2)	12·08641 „ 240·1	(2)	14·20165 „ 15
(3)	·01086 „ 1·2	(3)	1·01468 „ 2·1011
(4)	8·204875 „ 12	(4)	5·30687 „ 9·20186

Ex. 90.

Multiply,—

A		B		C	
(1)	·2 by ·8	(1)	·005 by ·02	(1)	31·2 by 1·5
(2)	·4 „ ·8	(2)	·011 „ ·45	(2)	246·7 „ ·002
(3)	·12 „ ·11	(3)	·012 „ 2·1	(3)	793·8 „ ·012
(4)	·13 „ ·12	(4)	·01 „ 3·24	(4)	74·12 „ 1·4
(5)	·24 „ ·9	(5)	·201 „ 1·2	(5)	89·37 „ ·0005
(6)	·36 „ ·7	(6)	·405 „ ·13	(6)	34·072 „ ·0015

D		E		F	
(1)	3·1 by 1·4	(1)	243·7 by 2·05	(1)	237·9 by 7·12
(2)	6·02 „ 5·3	(2)	7,061·1 „ ·0011	(2)	187·2 „ 3·08
(3)	4·11 „ 1·11	(3)	·308 „ ·0015	(3)	67·013 „ ·014
(4)	212 „ ·009	(4)	41·2 „ ·012	(4)	·0015 „ 32
(5)	·813 „ 10	(5)	87·9 „ ·12	(5)	371·0124 „ 33·01
(6)	505·4 „ 3·01	(6)	433·71 „ ·0016	(6)	1·0216 „ 5·24

G	
(1)	·001 by ·02 by ·003
(2)	1·01 by ·04 by 1·1
(3)	554 by ·13 by 1·2
(4)	248 by ·6 by ·06 by 6
(5)	75·4 by ·011 by 1·1 by 11
(6)	865 by ·0012 by 12 by 1·2

Ex. 91.

A		B		C	
(1)	$\cdot 06 \div \cdot 2$	(1)	$\cdot 0001 \div \cdot 02$	(1)	$46\cdot 8 \div 31\cdot 2$
(2)	$\cdot 82 \div \cdot 4$	(2)	$\cdot 00495 \div \cdot 45$	(2)	$\cdot 4934 \div 246\cdot 7$
(3)	$\cdot 0132 \div \cdot 12$	(3)	$\cdot 0252 \div 2\cdot 1$	(3)	$9\cdot 5256 \div 793\cdot 8$
(4)	$\cdot 0156 \div \cdot 13$	(4)	$\cdot 0324 \div 3\cdot 24$	(4)	$103\cdot 768 \div 74\cdot 12$
(5)	$\cdot 216 \div \cdot 24$	(5)	$\cdot 2412 \div 1\cdot 2$	(5)	$\cdot 044685 \div 89\cdot 37$
(6)	$\cdot 252 \div \cdot 36$	(6)	$\cdot 05265 \div \cdot 13$	(6)	$\cdot 051108 \div 34\cdot 072$

D		E	
(1)	$4\cdot 34 \div 1\cdot 4$	(1)	$499\cdot 585 \div 243\cdot 7$
(2)	$81\cdot 906 \div 5\cdot 3$	(2)	$7\cdot 76721 \div 7\cdot 061\cdot 1$
(3)	$4\cdot 5611 \div 1\cdot 11$	(3)	$\cdot 000462 \div \cdot 308$
(4)	$1\cdot 908 \div \cdot 00009$	(4)	$\cdot 4944 \div 41\cdot 2$
(5)	$8\cdot 13 \div 10$	(5)	$10\cdot 548 \div 87\cdot 9$
(6)	$1,521\cdot 254 \div 3\cdot 01$	(6)	$\cdot 693936 \div 433\cdot 71$

F	
(1)	$1,693\cdot 848 \div 7\cdot 12$
(2)	$576\cdot 576 \div 3\cdot 08$
(3)	$\cdot 938182 \div \cdot 014$
(4)	$\cdot 046 \div 32$
(5)	$12,247\cdot 119324 \div 33\cdot 01$
(6)	$5\cdot 353184 \div 5\cdot 24$

CIRCULATING DECIMALS.

Ex. 92.

Reduce to Decimals.

A	B	C	D	E	F
(1) $\frac{1}{2}$	(1) $\frac{1}{3}$	(1) $\frac{1}{4}$	(1) $\frac{1}{5}$	(1) $13\frac{1}{2}$	(1) $15\frac{1}{2}$
(2) $\frac{1}{3}$	(2) $\frac{1}{4}$	(2) $\frac{1}{5}$	(2) $24\frac{1}{2}$	(2) $15\frac{1}{2}$	(2) $\frac{1}{2}$
(3) $\frac{1}{4}$	(3) $\frac{1}{5}$	(3) $\frac{1}{6}$	(3) $11\frac{1}{2}$	(3) $\frac{1}{2}$	(3) $\frac{1}{2}$
(4) $\frac{1}{5}$	(4) $\frac{1}{6}$	(4) $\frac{1}{7}$	(4) $9\frac{1}{2}$	(4) $\frac{1}{2}$	(4) $\frac{1}{2}$
(5) $\frac{1}{6}$	(5) $\frac{1}{7}$	(5) $\frac{1}{8}$	(5) $7\frac{1}{2}$	(5) $28\frac{1}{2}$	(5) $\frac{1}{2}$
(6) $\frac{1}{7}$	(6) $\frac{1}{8}$	(6) $\frac{1}{9}$	(6) $13\frac{1}{2}$	(6) $13\frac{1}{2}$	(6) $\frac{1}{2}$

Ex. 93.

Reduce to Vulgar Fractions.

A	B	C	D	E
(1) $2\cdot 4$	(1) $\cdot 07$	(1) $\cdot 051$	(1) $\cdot 301$	(1) $2\cdot 01$
(2) $\cdot 54$	(2) $\cdot 05$	(2) $3\cdot 54$	(2) $\cdot 25$	(2) $5\cdot 324$
(3) $\cdot 32$	(3) $\cdot 03$	(3) $4\cdot 123$	(3) $3\cdot 025$	(3) $\cdot 0132$
(4) $\cdot 056$	(4) $\cdot 04$	(4) $3\cdot 7659$	(4) $4\cdot 125$	(4) $\cdot 214$
(5) $\cdot 201$	(5) $\cdot 02$	(5) $4\cdot 013$	(5) $1\cdot 003$	(5) $\cdot 97$
(6) $\cdot 146$	(6) $\cdot 01$	(6) $5\cdot 72$	(6) $\cdot 001$	(6) $2\cdot 029$

Ex. 94.

Find the value of the following Decimals correct to six places.

- A** (1) $8\cdot3 + 5\cdot297 + \cdot0538 + \cdot014 + 2\cdot65 + 3\cdot4125$.
 (2) $5\cdot97 + 3\cdot25 + 1\cdot4 + 3\cdot271 + 4\cdot09 + \cdot0159$.
 (3) $4\cdot32 + 8\cdot97 + 6\cdot24 + 7\cdot38 + \cdot0825 + \cdot324$.
 (4) $5\cdot96 + 3\cdot48 + 3\cdot62 + \cdot9832 + \cdot3265 + 91\cdot24$.
- B** (1) $7\cdot341 + 8\cdot921 + 3\cdot684 + 9\cdot832 + \cdot0141 + \cdot123$.
 (2) $8\cdot148 + 9\cdot356 + 4\cdot321 + 8\cdot615 + 9\cdot32 + \cdot148$.
 (3) $\cdot0156 + 2\cdot324 + 8\cdot931 + 7\cdot214 + 6\cdot317 + 9\cdot04$.
 (4) $2\cdot08 + 8\cdot56 + 3\cdot27 + 4\cdot86 + 9\cdot37 + 5\cdot24$.
- C** (1) $2\cdot34 - 1\cdot0254$; $3\cdot812 - \cdot6152$; $3 - 2\cdot152$.
 (2) $4\cdot1 - 3\cdot2187$; $5\cdot2190 - \cdot1086$; $4\cdot3 - 2\cdot0873$.
 (3) $2\cdot32 - 1\cdot056$; $3\cdot214 - 1\cdot021$; $8\cdot3 - 1\cdot0246$.
 (4) $5\cdot87 - 1\cdot04$; $12\cdot106 - 3\cdot014$; $9\cdot21 - 3\cdot024$.

Multiply,—

- D** (1) $2\cdot4$ by $1\cdot3$; $6\cdot2$ by $1\cdot5$; $3\cdot8$ by $2\cdot1$; $4\cdot1$ by $5\cdot2$.
 (2) $3\cdot4$ by $\cdot27$; $\cdot15$ by $1\cdot2$; $5\cdot6$ by $\cdot36$; $7\cdot4$ by $\cdot54$.

Divide,—

- (3) $7\cdot2$ by $3\cdot4$; $2\cdot1$ by $6\cdot01$; $3\cdot24$ by $5\cdot72$; $3\cdot81$ by $2\cdot5$.
 (4) $6\cdot5$ by $7\cdot2$; $8\cdot7$ by $6\cdot21$; $1\cdot46$ by $2\cdot04$; $5\cdot24$ by $1\cdot3$.

Ex. 95.

- A** (1) Find the value of £·5; £·25; £·125; £·625; £·375.
 (2) " " £·75; £·3125; £·15625; £·875.
 (3) " " ·325 of 15s.; 3·25 of 2s. 6d.; 4·75 of 10s.
 (4) " " 3·125 of 5s.; 4·875 of 16s.; 5·375 of 8s.
- B** (1) " " 5·2 of 9 guineas; 3·3 of 5 crowns.
 (2) " " £·2625; £·315; £2·15; £7·35.
 (3) " " ·375 yard; ·625 yard; ·875 yard; ·125 yard
 (4) " " ·6 lbs. (troy); ·75 of 4 lbs. (troy); ·125 of 8 lbs. (troy).
- C** (1) " " ·025 ton; 1·625 cwt.; ·875 mile; ·75 acre.
 (2) " " ·25 league; 3·375 bushels; ·375 cub. foot.
 (3) " " ·135 lb. (avoir.); 2·15 days; 3·175 yards.
 (4) " " ·025 of 5s.; ·0125 of 6s. 8d.; ·03125 of £1 6s. 8d.

Ex. 86.

Reduce,—

- A** (1) 2s. 6d.; 5s.; 4s.; 6s. 8d.; 3s. 4d. to the decimal of £1.
 (2) 7s. 6d.; 10s.; 12s. 6d.; 15s.; 17s. 6d. „ „ £1.
 (3) 1s. 4d.; 1s. 3d.; 6d.; 8d.; 3d.; 1s. 8d. „ „ £1.
 (4) 1s. 3d.; 3s. 9d.; 7½d.; 10d.; 1s. „ „ 5s.
- B** (1) 3s. 4d.; 2s. 6d.; 1s. 8d.; 5s.; 1s. 3d. „ „ 10s.
 (2) 10s.; 5s.; 4s.; 3s. 4d.; 6s. 8d. „ „ £5.
 (3) 1 oz. 6 dwts. to the decimal of 1 lb.
 (4) 3 hours to the decimal of 3 days; 5 minutes to the decimal of 6 hours.
- C** (1) 220 square yards to the decimal of 1 acre; 2 roods to the decimal of 10 acres.
 (2) 880 yards to the decimal of 3 miles; 55 yards to the decimal of ¼ mile.
 (3) 224 lbs. to the decimal of 1 ton; 112 lbs. to the decimal of 8 tons.
 (4) 242 sq. yds. to the decimal of an acre; 121 sq. yds. to the decimal of 8 acres.

**EXAMINATIONS IN DECIMAL FRACTIONS.****Ex. 87.**

- A** (1) Add together 2·45 and 3·3; from the sum take ·5, and multiply the difference by ·125.
 (2) Add together 1·125, 3·375 and 6; multiply the sum by ·05, and divide the product by ·625.
 (3) What decimal must be added to the product of 6½ and 3½, so that the sum may be 50·107?
 (4) From ·875 of a £, take 10s., and reduce the remainder to the decimal of £20.
- B** (1) What decimal of £10 is the sum of £·3125 and ·0625 of £20?
 (2) There were 400 pupils in a school of six classes. The number of pupils in the two lower classes was ·625 of the whole number of pupils in the school. How many were there in the four upper classes?
 (3) Express 241·015625 days in days, hours, minutes and seconds.
 (4) Which is the greater, ·03 or ·03̄, and by how much?

- C** (1) Add together £10·725, £1·1875, £3·015 and 4d.
 (2) The sum of two fractions is 5·108, and their difference 1·1; find the fractions.
 (3) The difference between two decimals is ·25; if ·025 be added to the greater fraction and subtracted from the lesser, their difference will then be ·8; find the two decimals.
 (4) There are 20,000 people in a town; half the number are men, ·375 of the number women, and the remainder are children; how many children are there?
- D** (1) At an election 4,000 men voted; ·625 of the voters voted for the successful candidate; how many voted for the unsuccessful candidate?
 (2) At an election 3,000 men were qualified to vote; ·05 of the electors did not vote on account of illness, and ·25 abstained from voting not caring to lose time; how many voted?
 (3) A purse containing £50 is divided among men, women and children; the men receive ·3 of the contents, the children ·2916 of the contents, and the women the remainder; how much do the women receive?
 (4) Find the product of the sum and difference of ·3 and ·3.
- E** (1) Divide the sum of the following fractions by their difference, ·3 and ·3.
 (2) What fraction of £20 is 3·125 of 20 five-shilling pieces?
 (3) If £20 will serve 16 persons for 12·25 days, how many days will £50 serve the same number of persons?
 (4) If 20 men can mow 15·125 acres in 4 days, how many men can mow 90·75 acres in the same time?
- F** (1) If 30 cows are kept 20 days for £12·75, how many cows can be kept for £114·75 for the same number of days?
 (2) What will be the cost of 240·15 lbs. of sugar, when 48·03 lbs. cost 12s. 6d.?
 (3) Reduce ·875 of a mile to the decimal of 10 leagues.
 (4) If ·6 of an ounce of gold be worth £2 2s., what is the worth of 2 lbs. 6 oz.?
- G** (1) The sum of two fractions is 2·25, and their difference 1·45; what are the fractions?
 (2) The product of two fractions is 1·25, and when the greater is divided by the lesser the quotient is 5; what are the two fractions?
 (3) If ·6 of an orange is worth 3d., what is the worth of 153·6 oranges?
 (4) Multiply 3·25 by 1·25, from this product take ·0005, to the difference add ·062, and reduce the sum to the fraction of 20·625; and express the answer as a decimal.

- H (1) If $\cdot 0125$ of a ship be worth £1,000, what will $\cdot 625$ of it be worth?
- (2) A post is painted in four different colours; $\cdot 125$ of its length is painted black, $\cdot 375$ white, $\cdot 125$ red, and the remainder, 24 yards, blue; what is the length of the post? and what length of it is painted in each colour?
- (3) If $\cdot 05$ of a piece of land be worth £30, what is the worth of $\cdot 75$ of it?
- (4) Express $\frac{3}{4}$ of a $\frac{1}{2}$ of 4s. as a decimal, and reduce this fraction to the decimal of 12s.
- I (1) Divide 78.25 by 2.5; if this quotient is the numerator and 378 the denominator of a vulgar fraction, express the fraction as a decimal.
- (2) Simplify, $(3\frac{1}{2} + 4\frac{1}{2}) \div (7\frac{1}{2} - 2\frac{1}{2})$, and find the equivalent decimal.
- (3) In a school of 500 pupils $\cdot 25$ were absent and 25 failed to pass the examination; how many children passed?
- (4) What number must be divided by 32.5 so that the quotient may be 1.5.
- J (1) What number must be multiplied by 30.12 so that the product may be 3.6144?
- (2) What number must be subtracted from 200.34 so that the difference may be 189.44?
- (3) What number must be added to 2.1 so that the sum may be 189.04?
- (4) A certain number divided by 5 gives the quotient 602.9, and multiplied by 4 gives the product 12058; what is the number?
- K (1) How many flags each containing 3.5 square feet will be required for a pathway containing 7,000 square feet?
- (2) Find the value of £.0625, and reduce this to the decimal of two pounds.
- (3) Find the value of £1.125, and reduce this to the decimal of £5.
- (4) Find the value of $\cdot 03125$ of £64, and reduce this to the decimal of £20.
- L (1) How many yards of carpet $\cdot 75$ yard wide will be required for a room 15 yards square?
- (2) If the income-tax be £.03125 in the £, what will a person have to pay who has an income of £240?
- (3) Find the value of $\cdot 05625$ of a £50 note.
- (4) At a show there were 200 animals, including horses, cows and sheep; the number of cows was $\cdot 75$ the number of sheep, and the number of horses $\cdot 3$ the number of cows; how many were there of each?

- M (1) If $\frac{1}{6}$ of a piece of land cost £480, how much can $\frac{1}{2916}$ of it be bought for?
- (2) What fraction of a mile is $\frac{1}{375}$ of a yard?
- (3) A man can walk $\frac{1}{6}$ of a mile in 20 minutes; in what time can he walk 4 miles if he walk twice as fast as before?
- (4) If a clock gain $\frac{1}{6}$ of a second in 20 minutes, in what time will it gain 20 minutes?
- N (1) (a) Multiply 8.5 by 3.142857, divide the product by $5\frac{1}{2}$, add $\frac{1}{6}$ of .75 to the quotient, and find the difference between this sum and $24\frac{1}{2}$.
- (b) Reduce the above answer (a) to the decimal of 300.
- (2) How many persons each eating .625 lb. of meat for dinner can be supplied with dinner from two joints weighing together 4 stones 4 lbs.?
- (3) In a train there were 900 passengers, consisting of men, women and children; the women numbered $\frac{1}{6}$ of the men, and the children $\frac{1}{3}$ of the women; how many were there of each?
- (4) If a man can walk 14.75 miles in 3.5 hours, how many miles is that an hour?
- O (1) From $\frac{1}{2}$ of 10s., take .06 of a sovereign, and reduce the remainder to the decimal of $\frac{1}{8}$ of a sovereign.
- (2) What decimal of £5 is, $\frac{1}{3}$ of .75 of $\frac{1}{8}$ of .83 of £ .4 of 1.1 of .45 of 50s.?
- (3) If a man can finish a piece of work in 20 day hat decimal of it will he finish in one, three, four and eight days respectively?
- (4) What is the width of a rectangular piece of ground of which the length is 45.01 yards, and the area 96.7715 square yards?
- P (1) How many times is £.0625 contained in £62.5?
- (2) A bricklayer builds $\frac{1}{12}$ of a wall in 6 days; in what time will he build .05 of it?
- (3) If a man dig .05 of a well in a day, in what time will he finish it?
- (4) Find the sum and difference of .375 of £5, and .75 of £15. How much more than £5 is there in the difference? Express this as a decimal.

- Q** (1) What number must be added to the difference between 2.85 and 1.1 so that the sum shall be 300?
- (2) Find the sum of .125 of a ton, .375 of 1 cwt., .875 of a qr., and .125 of a lb.
- (3) A boy can copy .4 of a page in 5 minutes, in what time can he copy 320 pages of the same size?
- (4) A sum of money is divided among four persons; the amount of their shares being represented respectively by 25.12, 6.28, 12.56 and 3.14; the smallest share was 5s.; how much money was divided among them?
- R** (1) Divide £1,000 among four persons in the ratio of .2, .3, .45, .05.
- (2) If .3125 of a ship be worth £10,000, what is .625 of it worth?
- (3) If .125 of a house be worth £72.25, what is the house worth?
- (4) One pipe, *A*, can fill a cistern in 30.5 minutes, another pipe, *B*, can fill it in 15 minutes; in what time can they fill it together?
- S** (1) A pipe, *A*, can fill a cistern in 2.5 minutes, another pipe, *B*, can empty it in 3.75 minutes; the two pipes are turned on together; in what time will the cistern be full?
- (2) *A* can do a piece of work in 3.5 days, *B* in $2\frac{1}{2}$ days, and *C* in 5 days; in what time can they finish it together?
- (3) *A* can do a piece of work in 5 days, *B* can do it in 10 days, and *C* can do it in 4 days; *A* and *B* work together for 2 days; in what time can *C* finish the work alone? Give the answer in the form of a decimal.
- (4) A train travels at the rate of 62.5 miles an hour; at what time will it reach London if it leave Leeds at 10 o'clock in the morning? the distance from Leeds to London being 203.125 miles.
- T** (1) A boy walks at the rate of 3.75 miles an hour; in what time can he walk the distance walked by another boy who walks for 60 hours at the rate of 4.5 miles an hour?
- (2) A man walks twice as fast as a boy; the man walks at the rate of 4.125 miles an hour, and walks 49.5 miles; in what time can the boy walk the same distance?
- (3) Express 110 yards as the decimal of 5 miles.
- (4) Express £3.2125 in pounds, shillings, and pence.

- U (1) Find the total value of $11\cdot75$ of $8s. 0\frac{3}{4}d.$ + $7\cdot125$ of $\pounds 3\cdot675$ + $1\frac{1}{4}$ of $3d.$
- (2) Simplify, $\frac{.064 + 12\cdot25}{.9375}$
- (3) Express as decimal fractions, $1\frac{1}{2}$, $13\frac{1}{4}$, $11\frac{1}{10}$; and divide (a) $41\cdot22054$ by $.00687009$, (b) $72\cdot1068325$ by $.0726$.
- (4) If an ounce of gold be worth $\pounds 4\cdot0099$, what is the value of a bar of gold weighing $8\cdot416$ lbs.?
- V (1) Express one-farthing as a decimal of $\pounds 1$. Is $\pounds 0\cdot013$ or $\pounds 0\cdot014$ the nearer in value to $3\frac{1}{4}d.$? How much nearer?
- (2) A clerk copied $62\cdot5$ instead of $\cdot625$ of $\pounds 100$; what was the amount of his error?
- (3) The equatorial diameter of the earth being $41,847,662$ English feet, and the polar axis $41,707,536$ feet, by how much per cent. is the polar axis the shorter? By what length would the difference be represented in a globe 24 inches in diameter?
- (4) If the sixpenny loaf weigh $4\cdot85$ lbs. when wheat is at $5\cdot75s.$ per bushel, what weight of bread when wheat is at $18\cdot4s.$ per bushel ought to be purchased for $18\cdot13s.$?
- W (1) Find the value of $\frac{.09318}{.5681}$ of $2\frac{1}{4}$ of $2\cdot5$ days + $2\cdot81$ of $365\frac{1}{4}$ days.
- (2) Find how many flagstones each $5\cdot76$ ft. long and $4\cdot15$ ft. wide are requisite for paving a cloister which encloses a rectangular court $45\cdot77$ yds. long and $41\cdot93$ yds. wide: the cloister being $12\cdot45$ ft. wide.
- (3) A person walking at the rate of 1 mile 2 fur. $8\frac{1}{2}$ poles in 20 minutes performs a journey of 149 miles 2 fur. 15 poles: allowing $11\frac{1}{2}$ hours in 24 hours for rest, express the time of the journey in days and decimal parts of a day.
- (4) How can you tell by looking at a vulgar fraction whether or not it will be *circulating* when expressed as a decimal? In what form must the vulgar fraction be given? Illustrate your answer by examples.

SIMPLE PROPORTION.

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Ex. 98.

- A** (1) Twenty-four men reap 60 acres of corn for £90, for how much would they reap 960 roods?
- (2) If 36 men can dig a well 12 yards deep in 2 days, in what time could they dig a well $\frac{1}{2}$ of a mile deep?
- (3) A coal mine is 100 fathoms deep; if this shaft is sunk by 120 men in 75 days, how long would it take the same number of men to sink the shaft of another mine 230 fathoms deep?
- (4) If 12 horses can draw a load of 14 tons 10 cwts. 3 qrs., how many horses can draw a load of 145 tons 7 cwts. 2 qrs.?
- B** (1) If a horse can draw as heavy a weight as 3 donkeys, and 20 donkeys can draw a load of 7 tons, how many horses can draw a load of 168 tons?
- (2) If 3 horses eat as much as 4 cows, and 48 cows are kept three weeks for £24, how many horses would be kept for £96 for the same time?
- (3) Three horses are worth as much as five cows, and 20 cows are worth £300, what are 36 horses worth?
- (4) The rent of the houses on one side of a street is altogether £1,000: the rent of two of the houses is £40 each, and of each of the others £20: how many houses are there in the street if the two sides of the street correspond exactly?
- C** (1) There are twelve rooms in a house, and each room is let out to different parties: the rent of each is 7s. 6d. a week: if the rooms are occupied all the year, what is the total amount of rent paid?
- (2) If it costs £3 10s. in wages and material to pave 2 sq. yds. of a street, how much will it cost to pave 900 sq. ft.?
- (3) If 6 lbs. of tea supply a party of 300 men and women at a pic-nic, how much tea would be required to supply 50 men and women, there being as many men as women in each case?
- (4) If the number of passengers by a train be 400, and there be four times as many third class, and three times as many second class, as first class passengers; the fares for the 1st, 2nd and 3rd classes being respectively 20s., 15s. and 10s.; what is the amount paid in fares?

- D (1) What is the cost of 2 cwts. 3 qrs. of tea at 1s. for 3 oz.?
- (2) How many hats can I buy for £360 13s. 4d., at 6s. 8d. each?
- (3) There are 200 householders in a large village, the average rent of each house is £25, and a tax of 6d. in the £ is to be paid; what is the amount of the tax paid in the village?
- (4) If the interest on £5,040 is £252, what is the interest on £1,000?
- E (1) If 12 apples are worth 21 pears, and 3 pears cost $\frac{1}{2}$ d., what is the price of 70 apples?
- (2) If a tradesman use a false weight of $14\frac{1}{2}$ oz. for a pound, how many pounds will 112 lbs. of just weight appear to be when weighed by his false weight?
- (3) A bankrupt owes his creditors £2,960, and can pay them 12s. 6d. per £1; how much would a person receive to whom he owes £641 18s. 4d.?
- (4) If $15\frac{3}{4}$ grains of silver be worth $2\frac{1}{2}$ d., what is the worth of $\frac{1}{8}$ dwts.?
- F (1) I bought tea at 4s. 8d. per lb.; how must I sell it to gain £12 10s. on every £100 worth of tea sold?
- (2) In how long a time would a cannon ball with a uniform velocity of 1,960 feet per second move from the Sun to Uranus, 1,810 millions of miles?
- (3) If 11 cwts. 3 qrs. 17 lbs. 11 oz. of coffee cost £44 9s. $1\frac{1}{2}$ d., what will 6 tons 10 cwts. 3 qrs. 26 lbs. 9 oz. cost?
- (4) If 15 men can mow 120 acres in 12 days, how many men can do the same work in 10 days?
- G (1) If 3 lbs. 6 oz. 17 dwts. of plate cost £15 8s. $6\frac{1}{2}$ d., what will 17 lbs. 10 oz. 5 dwts. cost?
- (2) If a man gets £3 3s. a week, and puts by £10 a quarter, how much does he spend weekly?
- (3) Property which brings 7 per cent. lets for £85 15s.; what was the purchase money?
- (4) The gas consumed by one burner in 56 days costs £2 7s. $6\frac{1}{2}$ d.; what will the gas of another burner cost for 40 days which consumes only $\frac{2}{3}$ of the former?

- H** (1) How much water must be added to a cask containing 60 gallons of gin at 12s. 6d. a gallon, to reduce the price to 8s. a gallon?
- (2) From London to Brighton is $50\frac{1}{2}$ miles. In what time will a train perform the journey at the rate of 990 yds. per m.u., allowing $\frac{1}{4}$ of an hour for stoppages?
- (3) What is the cost of carrying goods 56 miles 2 fur. 25 po. at £1 3s. 7½d. per mile?
- (4) The wages of 26 men are £32 10s. per week. What sum will be required to pay 84 men at the same rate?
- I** (1) If 246 cwts. 3 qrs. 24 lb. of sugar at £3 5s. 4d. per cwt. be exchanged for 302 qrs. 4 bush. 1 pk. of oats, what is the value of oats per peck?
- (2) If the railway fare for 77 miles be 22s., what will be the expense of travelling 364 miles; and what the rate per mile?
- (3) How many bricks will be required to build a wall 8 ft. high, 1 ft. 8 in. thick, and 5 poles in length? the dimensions of a brick being 10 inches long, 4 inches broad, and 2½ in. thick.
- (4) How much will $\frac{5}{8}$ of 78½ yards amount to at 5s. 3d. for $\frac{1}{2}$ of 1½ yards?
- J** (1) If 5 oxen are worth 24 sheep, and 4 sheep are worth £13, what are 55 oxen worth?
- (2) A bankrupt pays 13s. 9d. in the pound upon £1,575; how much did he pay?
- (3) An income of £150 per annum pays a tax of £4 7s. 6d.; what will be the tax on an income of £568 1s.?
- (4) A rate of £279 10s. is to be made for the poor on a parish which yields a rental of £7,850; what is the rate per pound?
- K** (1) A person's quarterly income is £135 10s., and his daily expenditure £2 5s.; how much will he be in debt at the end of two years and a half?
- (2) A tunnel $\frac{7}{8}$ mile long is excavated at the rate of $\frac{1}{11}$ yard per day; in how many years will it be completed?
- (3) What is the worth of 6 hides of leather, 4 of which weigh 28½ lbs. each, and the others 29 lbs. 6 oz. and 33 lbs. 4 oz. respectively, the value of the leather being 1s. 6½d. per lb.?
- (4) Seventy-four men had provisions for 35 days, but after 5 days 20 men were sent away; how long will the provisions last the remaining 54 men?

- L (1) The incomes of *A* and *B* are in the ratio of two to five. The income-tax being 5*d.* in the pound, *B* pays £27 8*s.* 9*d.* as income-tax. What is *A*'s income?
- (2) A man receives 7*s.* 6*d.* in the pound of what is due to him, losing thereby £75 5*s.* 5*d.* What was due to him?
- (3) A coach travels $7\frac{1}{2}$ miles an hour; how far will it have gone between 10-15 a.m. and 5-45 p.m.?
- (4) If a servant's wages be £27 10*s.* a year, what should he receive for 146 days?
- M (1) What will be the rent of 1 ac. 2 ro. 8 po. of land if 3 acres are let for £9 5*s.*?
- (2) A coach-wheel made 1,157 turns in going over 1,382 yds. 1 ft. 8 $\frac{1}{2}$ in. How many turns will it make in going over 266 yds. 1 ft. 1 in.?
- (3) If a workman earn £3 18*s.* 7 $\frac{1}{2}$ *d.* in 37 days, in what time will he earn £1 4*s.* 5 $\frac{1}{2}$ *d.*?
- (4) How many yards at 4*s.* 9 $\frac{1}{2}$ *d.* per yard are worth 3,127 $\frac{1}{2}$ yds. at 7*s.* 6 $\frac{1}{2}$ *d.* per yard?
- N (1) How many yards of material could be bought for £20 16*s.* 9 $\frac{3}{4}$ *d.* at the rate at which 937 $\frac{1}{2}$ yards would cost £111 6*s.* 6 $\frac{3}{4}$ *d.*?
- (2) The valued rents of a parish are £5,070 16*s.* 8*d.*, and on this a rate of £405 13*s.* 4*d.* is to be paid; what will be the rate on a rent of £68 8*s.* 9*d.*?
- (3) Find the weight of sugar I may obtain for £6 14*s.* 2*d.* if 25 cwts. 2 qrs. cost £59 10*s.*
- (4) If 3 ducks are worth 4 chickens, and 3 geese are worth 10 ducks, find the value of a goose; a pair of chickens being worth 4*s.* 6*d.*
- O (1) If 12 men working 10 hours a day can excavate a tunnel in 18 days, how many hours a day must they work to do it in 15 days?
- (2) A bankrupt pays 13*s.* 8*d.* in the pound; how much is paid on a debt of £118 10*s.*?
- (3) A piece of cloth apparently measures 18 yds., but the yard measure used is $\frac{3}{16}$ inch too short; what is the true length of the cloth?
- (4) Two trains travelling in opposite directions at the respective rates of 36 and 42 miles an hour pass one another. How soon will they be 26 miles apart? and how far will they be apart in half-an-hour?

- P** (1) If $\frac{1}{4}$ of a ton is worth £4 10s., what is the value of $\frac{1}{2}$ of a ton?
- (2) Divide £153 among five persons, in the proportion of the fractions, $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \frac{1}{6}$.
- (3) If $3\frac{2}{3}$ lbs. cost 17s. 9 $\frac{1}{2}$ d., what will 17 $\frac{3}{4}$ lbs. cost?
- (4) What is the cost of 5 $\frac{1}{2}$ oz. of gold, when 1 $\frac{1}{2}$ oz. are worth £6 $\frac{1}{2}$?
- Q** (1) If $\frac{3}{4}$ yd. of ribbon cost 3 $\frac{1}{2}$ d., what will be the cost of 6 $\frac{1}{2}$ pieces, each containing 185 $\frac{1}{2}$ ells?
- (2) A gentleman possessing $\frac{1}{4}$ of an estate, sold $\frac{1}{4}$ of $3\frac{1}{4}$ of his share for £120 $\frac{1}{2}$. What would $\frac{1}{2}$ of $\frac{1}{4}$ of the whole estate sell for at the same rate?
- (3) If 1 $\frac{1}{2}$ bus. of wheat will sow 1 $\frac{1}{2}$ ac., what will the wheat cost for 37 ac., at £3 4s. a quarter?
- (4) If $(2\frac{1}{2} \text{ of } \frac{1}{2}) \div (\frac{1}{2} \text{ of } 3\frac{1}{2})$ of an acre of land be worth 35 guineas, what will 7 times $\left(\frac{7\frac{1}{2} - 4\frac{1}{2}}{\frac{1}{2} \text{ of } 3\frac{1}{2}}\right) \times \left(\frac{7\frac{1}{2}}{31\frac{1}{2}}\right)$ of 2 $\frac{1}{2}$ acres be worth at the same rate?
- R** (1) If 26.5 yards of silk cost £4 8s. 4d., how much will 32.25 yards cost?
- (2) How many oranges, at £.084375 a dozen, ought to be given for 378 eggs, at .0625s. each?
- (3) If 2.45 cwt. cost £22.75, how many cwt. may be had for £11.7?
- (4) If the poor-rate paid on a house, rated at £63, be £2.390625, what amount of poor-rate ought to be paid on a farm, rated at £272?
- S** (1) Find the cost of 3 hhds. of sugar, each weighing 11 cwt. 3 qrs. 10.12 lbs., at the rate of 72.66 shillings for 1.6 cwt.
- (2) If a snail crawl on the average 5 $\frac{1}{2}$ in. in 5 min. 3 sec., what fraction, and also what decimal, of a mile would it crawl in 2.4 hours?
- (3) A corn-dealer bought 198 bushels of barley for £32.5875, 100 bushels of which he sold at £.2375 a bushel. At what price per quarter may he sell the remainder, so as to gain £2.1875 by his bargain?
- (4) If 3 oz. of gold be worth £12.0297, what is the value of a nugget, weighing 1.683 lbs.?

COMPOUND PROPORTION.

Ex. 99

- A (1) If 8 men can mow 5 acres in 4 days, in what time can 9 men mow 15 acres?
 (2) If 8 men can mow 24 acres in 8 days, how many men can mow 96 acres in 48 days?
 (3) If 7 men can mow 14 acres in 7 days, how many acres can 21 men mow in 28 days?
 (4) If 5 men carry 10 cwt. a distance of 15 miles for a sum of money, how far ought 20 men to carry 40 cwt. for the same sum?
- B (1) If £12 will keep 6 oxen for 2 weeks, how much will keep 36 oxen for 24 weeks?
 (2) If a field of 3 acres is covered with turf by 12 men in 21 days, in how many days can 36 men turf a field of 54 acres?
 (3) If £9 will keep 8 oxen for 3 weeks, for how long will £36 keep 21 oxen?
 (4) If 21 oxen are kept 8 weeks for £63, how many oxen can be kept 84 weeks for £126?
- C (1) If 16 boys carry 4 cwt. a distance of 8 miles, what weight ought 32 boys to carry a distance of 4 miles?
 (2) If a field of 3 acres is ploughed by 6 horses in 3 days, how large a field should be ploughed by 12 horses in 24 days?
 (3) Sixteen men live 24 days for £48; how long can 96 men live for £144?
 (4) If 7 men are kept 21 days for £35, how much would 42 men be kept 56 days for?
- D (1) Fourteen boys win 196 marbles in 4 days; in how many days will 35 boys win 420 marbles?
 (2) A family of 8 persons consumes 16 lbs. of sugar in 14 days; how much will a family of 12 persons consume in 48 days?
 (3) Twenty-four men write between them 576 pages in 4 hrs.; how many pages can 96 men write in 48 hours?
 (4) A plantation containing 256 trees is planted by 4 men in 8 days; how many trees would there be in a plantation planted by 24 men in 32 days?
- E (1) A wall 24 yards long is built by 16 men in 4 days; what length of wall will 64 men build in 48 days?
 (2) A field of 3 acres yields 3,000 bushels of corn in 3 harvests; how many bushels of corn will 9 acres yield in 27 harvests at the same rate of production?
 (3) Thirty men earn £90 in 3 weeks; in what time will 15 men earn £960?
 (4) In 60 days 10 men earn £75; how much would 75 men earn in 225 days?

- F** (1) If 24 tons of coal are cut by 8 colliers in 2 days, how many tons can be cut by 40 colliers in 12 days?
- (2) In 72 days 216 tons of coal are cut by 12 colliers; in how many days can 36 colliers cut 108 tons?
- (3) The carriage of 3 cwt. for 60 miles is 15s.; what should be the carriage of 144 qrs. for 240 miles?
- (4) Twenty bricks are made by one man in 10 minutes; how long would it take 200 men to make 32,000 bricks?
- G** (1) In 14 hours 12 gross of pens are made by 8 men; how long would it take 24 men to make 360 gross?
- (2) A trench 90 yards long is dug by 15 men in 10 days; in what time can a trench 990 yards long be dug by 45 men?
- (3) A family of 14 persons spends £84 in 4 months; how long will £420 last a family of 7 persons at the same rate of expenditure?
- (4) Twenty-four cheeses are made by 4 women in 12 hours; how many cheeses can be made by 16 women in 24 hours?
- H** (1) If 3 men smoke 24 ounces of tobacco in 8 days, in how many days will 24 men smoke 16 lbs.?
- (2) Twelve pairs of boots are worn out by 6 men in 10 months; how many pairs will be worn out by 48 men in 3 yrs. 4 mo. at the same rate?
- (3) Twenty horses eat 45 bushels of corn in 50 days; how many pecks will 10 horses eat in 15 days?
- (4) Two sacks of potatoes each weighing 10 stones supply 30 persons for 6 weeks; how long ought 40 sacks each of the same weight to supply 120 persons?
- I** (1) Three chests of tea each weighing 50 lbs. supply a small village of 60 inhabitants for 20 days; how many days will 8 chests each weighing 100 lbs. supply a village of 180 inhabitants?
- (2) At cricket 4 men score 16 runs in 5 minutes; in what time will 8 men score 128 runs at the same rate?
- (3) If 16 men catch 56 fish in 14 minutes, in what time will 48 men catch 224 fish at the same rate?
- (4) Two hundred cups are manufactured by 20 men in 3 days of 12 hours each; how many cups can be made by 100 men in 4 days of 8 hours each?

- J** (1) Thirty-four bats are made by 8 men in 4 days; in how many days will 16 men make 128 bats at the same rate?
- (2) If 16 bundles of wood are consumed in 4 days in lighting 8 fires, how many bundles will be consumed in 20 weeks if the number of fires to be lighted is 12?
- (3) If 8 men row 12 miles an hour taking 40 strokes a minute, in what time will they row 56 miles taking 36 strokes a minute?
- (4) If a man walks 5 miles in an hour taking 40 steps a minute, how long will it take him to walk 30 miles taking 36 steps of the same length a minute?
- K** (1) A boy travels 212 miles in 20 days of 12 hours each; how far will he walk in 40 days of 10 hours each?
- (2) A wall 28 yards long and 8 yards wide is built by 4 men in 3 days; how long will it take 12 men to build a wall 50 yds. long and 4 yards wide, each wall being the same height?
- (3) Twenty birds are shot by 4 men in 10 minutes; how many will be shot by 20 men in 6 days of 10 hours each?
- (4) If 12 men can sow a field of 10 acres in 8 days of 8 hours each, how large a field can be sown by 48 men in 5 days of 8 hours each?
- L** (1) Fourteen hundredweights of sugar are manufactured by twelve men in 36 hours; in what time can 14 tons be manufactured by 36 men?
- (2) Four pipes each discharging 15 gallons of water a minute empty a cistern in 2 hours; how many pipes each discharging 20 gallons a minute will empty a cistern twice as large as the former in 3 hours?
- (3) Sixteen gallons of brandy are used by 12 men in 24 days; how many gallons will be used by 48 men in 72 days at the same rate?
- (4) Three printers print 14 books in 15 days; in what time can 24 printers print 84 books of the same size?
- M** (1) If 12 compositors can set 3,600 letters in 80 minutes, in what time can 60 compositors set 10,000 letters?
- (2) If 52,000 newspapers are printed in 12 nights of 5 hours each, how many ought to be printed in 60 nights of $4\frac{1}{2}$ hours each?
- (3) If a garden 12 yards long and 8 yards wide is put in order by 2 men in 30 hours, in what time should a garden 50 yards long and 30 yards wide be put in order by 12 men?
- (4) If 24 men can set 18 rows of potatoes in 6 hours, in how many hours can 36 men set 54 rows, each of the latter rows being twice the length of the former?

- N** (1) If 2,400 cabbages are planted by 16 men in 3 hours, how many can be planted by 96 men in 4 days of 12 hours each?
- (2) Twenty men are employed 24 days emptying 12 ships of their cargo; how many days must 40 men be employed emptying 60 ships of the same size?
- (3) If 12 men earn £30 in 2 weeks, how much will 20 men earn in 12 weeks if each of the latter earns twice as much per week as each of the former?
- (4) If 36 men draw 10,800 gallons of water out of a reservoir in 6 hours, how much can be drawn by 72 men in 12 hours if each of the latter draws twice as much as each of the former men in the same time?
- O** (1) Twenty sheep are allowed to pasture in a field of 12 acres for 120 days. They are then withdrawn on account of there not being sufficient to sustain them. For how long should 240 sheep be allowed to pasture in a field of 36 acres before they are withdrawn?
- (2) If 15 cows are allowed to pasture in a field of 10 acres for 4 days, how long should 60 sheep be allowed to pasture in a field of 20 acres, a sheep eating half as much as a cow?
- (3) If 20 horses are kept 10 days for £15, how long should 20 cows be kept for £50 if the cost of keeping a cow be only half that of a horse?
- (4) If 36 fishermen catch 360,000 herring in 4 days, in what time should 12 fishermen catch 12,000 at the same rate?
- P** (1) Fourteen mills produce 1,400 sacks of flour in 7 days; in how many days will 21 mills produce 3 ship-loads, each holding 2,800 sacks?
- (2) If 32 workmen make 1,000 pipes in 4 days, how long will it take 8 workmen to make 240 pipes?
- (3) If 20,000 boxes of matches are made up by 16 workmen in 15 hours, how many boxes can be made up by 60 workmen in 50 hours?
- (4) Three silver spoons of 14 out of 16 parts pure silver are worth 18s. 6d.; what are 36 silver spoons worth of 12 out of 16 parts pure silver?
- Q** (1) If 12 men can put 30 windows in a house in 6 hours, in what time can 48 men put in 120 windows?
- (2) If 12 cwt. 3 qrs. are carried 9 miles for £8 10s., for what sum should 51 cwt. be carried 45 miles?
- (3) If a man can read 20 pages of a book with 32 lines in a page in half-an-hour, in what time can he read a book of 420 pages when there are 30 lines in a page?
- (4) If 50 men earn £75 in 6 days of 10 hours a day, how much will 150 men earn in 24 days of 9 hours a day?

- R (1) A man walks for 12 days at the rate of 3 miles an hour; in what time will another man walking at the rate of $4\frac{1}{2}$ miles an hour perform the distance walked by the former man?
- (2) If 36 men can gild 240 ornaments in 4 days of 10 hours each, how many ornaments can be gilded by 180 men in 12 days of 15 hours each?
- (3) If 19 men can carve 95 balls in 3 days, in how many days can 138 men carve 1,920 balls?
- (4) If 20 men and 10 boys can make 40 chairs in 2 days, in how many days can 60 men and 12 boys make 200 chairs, a man being equal to two boys?
- S (1) Three canisters of snuff each containing 4 lbs. are worth £3 10s.; what is the worth of 20 canisters each containing 6 lbs. if 4 lbs. of the latter be worth 6 lbs. of the former?
- (2) If a wall 12 feet long, 8 feet wide, and 10 feet high be built by 20 men in 2 hours, how long will 30 men be in building a wall 30 yards long, 2 yards wide, and 3 yards high?
- (3) If 20 suits of clothes each containing 6 yards of material can be made for £70, for how much can 80 suits be made each containing 5 yards when a yard of the latter material is worth twice as much as a yard of the former?
- (4) If 3,400 tons of coal are carted by 50 waggons in 36 days, in what time can 40,000 cwt. of coal be carted by 25 waggons?
- T (1) For every pound of tea consumed by a family three pounds of sugar are consumed. If a family of 12 persons consumes 63 lbs. of sugar in 21 days, how much tea and sugar will be consumed by a family of 24 persons in 77 days?
- (2) How many yards of cloth 18 in. wide will make 24 suits of clothes, when 50 yards 20 inches wide will make 11 suits?
- (3) If a mill with 63 hands can manufacture 252,000 yards of thread in 24 hours, in how many hours can a mill with 21 hands manufacture 63,000 yards?
- (4) If 2 cwt. 3 qrs. of sugar supply 20 persons for 150 days, how long will 3 tons supply 50 persons?
- U (1) If 500 pockets of hops are conveyed by rail a distance of 250 miles for £25, for how much will 125 pockets be conveyed 1,000 furlongs?
- (2) If 200 cwt. of sugar are conveyed by rail a distance of 320 miles for £12, what distance should 20 tons be conveyed for £72?
- (3) If 20 tons of coal are consumed by 6 fires in 20 weeks, how many tons will be consumed by 20 fires in 40 weeks?
- (4) If a school of 400 children is treated five times a year for £25, how many children are there in a school which is treated four times a year for £30, the provisions in each case being of the same kind and value?

- V (1) If a railway company running 20 trains a day takes for fares for 6 months (30 days each) £5,200, how much will another company with as many passengers in each train, and running 15 trains a day, take in 150 days?
- (2) If 3,000 tickets are issued altogether from 12 stations in 2 hours, in how many hours will 24,000 tickets be issued from 36 stations at the same rate?
- (3) If a reservoir containing 3,000,000 gallons of water will, without being replenished, supply a town of 5,000 inhabitants for 10 weeks, how long will a reservoir containing $1\frac{1}{2}$ million gallons supply a town of 2,000 inhabitants?
- (4) If 100 silkworms produce 50,000 yards of silk in 10 days, in how many days will 50 silkworms produce 250,000 yards?
- W (1) If 320 lbs. of candles are manufactured by 20 men in 15 days, how many pounds can be manufactured by 50 men in 60 days?
- (2) If 2,400 books are printed by 60 men in 240 days, how many can be printed by 15 men in 60 days?
- (3) If 16 women can make 24 dresses in 15 hours, in what time can 64 women make 480 dresses?
- (4) A dozen men make 30 tables in 60 hours, in what time will 340 men make 900 tables of the same size?
- X (1) To pave a street 240 feet long and 25 feet wide 50,000 stones are required; how many will be required to pave a street 260 yards long and 30 feet wide?
- (2) Sixty men are employed 20 days of 10 hours each to dig a well 300 feet deep; what would be the depth of a well dug by 20 men employed 15 days of 9 hours each?
- (3) If a garrison of 1,000 men can be provisioned for 20 days for £500, what amount would be required to provision a garrison of 850 men for 50 days?
- (4) If 240 poor are relieved by the parish authorities with £75 for 3 weeks, how long would they be able to relieve 960 poor with £1,000?

Ex. 100

- A (1) A wall was to be built 700 yards long in 29 days; after 12 men had been employed on it for 11 days it was found they had only built 220 yards. How many additional men must be employed to finish it in the given time?
- (2) If 50 men can dig a trench 360 feet long, 9 feet deep, and 20 feet wide in 9 days of 12 working hours, how many will be required to dig one of 420 feet long, 7 feet deep, and 16 feet wide in 8 days of 14 hours each?
- (3) If an army of 5,000 men could march 96 miles in 6 days of 8 hours each, in how many days of 5 hours each could an army of 1,500 men march the same distance?
- (4) If the 6d. loaf weigh 35 oz. when wheat is 37s. a load, what should the 7d. loaf weigh when wheat is at 29s. per load?

- B (1) If 24 men in $2\frac{1}{2}$ days of $12\frac{1}{2}$ hours dig a trench $139\frac{1}{2}$ yards long, $4\frac{1}{2}$ yards wide, and $2\frac{1}{2}$ yards deep, what length of trench will 90 men dig in $4\frac{1}{2}$ days of $9\frac{3}{4}$ hours, the trench being $4\frac{1}{2}$ yards wide and $3\frac{1}{2}$ yards deep?
- (2) If 12 candles 8 to the lb. serve 4 evenings from 5 to 11 o'clock, how many candles 6 to the lb. will serve 3 evenings from 7 to 11 o'clock?
- (3) If the carriage of 17 cwts. 3 qrs. for $7\frac{1}{2}$ miles cost 20s. $8\frac{1}{2}d.$, what weight should be carried 20 miles for 16s. $4d.$?
- (4) If 18 horses eat 37 qrs. 7 bush. 3 pks. of corn in 45 days, in what time will 50 horses eat 25 quarters?
- C (1) If a family of 9 persons spend £300 in 8 months, how much money will serve 17 persons 11 months at the same rate of expenditure?
- (2) Two pipes, *A* and *B*, can empty a cistern in 20 minutes and 30 minutes respectively. A third pipe, *C*, can fill the cistern in 60 minutes. The three pipes are turned on together; in what time will the cistern be empty?
- (3) *A* can do a piece of work alone in 15 days, *B* can do it alone in 10 days, and *C* in 20 days; in what time can they do it together?
- (4) *A* can do a piece of work in 20 hours, *B* in 25 hours, and *C* in 30 hours; how much can they do together in 3 hours?
- D (1) If 30 horses eat $25\frac{1}{2}$ bushels of oats in 6 days, how much will one horse eat in a week?
- (2) A man can reap $302\frac{1}{2}$ sq. yds. in an hour; in what time will 3 such men reap $2\frac{1}{2}$ acres?
- (3) If $10\frac{1}{2}$ yards of cloth, which is 18 inches wide, cost £4 18s. $6\frac{1}{2}d.$, what will $123\frac{1}{2}$ yards of yard-wide cloth cost?
- (4) If £50 in 5 months gain $£2\frac{1}{4}\frac{1}{4}$, what time will £13 $\frac{1}{2}$ require to gain £1 $\frac{1}{4}$?
- E (1) If 40 men reap 400·6 acres in 12·75 days, how many acres ought 30 men to reap in 3·4 days?
- (2) A person is able to travel 142·2 miles in $4\frac{1}{2}$ days, of 10·164 hours each; in how many days of 8·4 hours each can he travel 505·6 miles?
- (3) If 16·125 yards of calico, 1·375 yards wide, cost £2·2, what ought 45 yards, ·875 of a yard wide, to cost at the same rate?
- (4) If 24 men can do a piece of work in 1·4 days, working 8·1 hours a day, how many hours a day must 28 boys work in order to complete the same in 4·5 days, the work of a boy being half that of a man?

SIMPLE INTEREST.

Ex. 101.

- A** (1) Find the simple interest on £500 for 4 years at 3, 4, 5, 6, 7 and 8 per cent.
 (2) Find the simple interest on £300 16s. 8d. for 5 years at 5, 10 and $12\frac{1}{2}$ per cent.
 (3) Find the simple interest on £440 3s. 4d. for 10 years at $2\frac{1}{2}$, $7\frac{1}{2}$ and $12\frac{1}{2}$ per cent.
 (4) Find the amount of £360 13s. 4d. for $2\frac{1}{2}$ years at $2\frac{1}{2}$, 4, 5, $7\frac{1}{2}$, 10 and $12\frac{1}{2}$ per cent.
- B** (1) Find the amount of £760 15s. for 5 years at 5, $7\frac{1}{2}$, 10, $12\frac{1}{2}$ and $6\frac{3}{4}$ per cent.
 (2) Find the commission on £5,750 at 7s. 6d., 10s., 12s. 6d., 15s., 17s. 6d. and 1s. 4d. per cent.
 (3) At what rate per cent. simple interest will £225 amount to £256 10s. in 4 years?
 (4) In what time will £75 10s. 5d. amount to £89 2s. $3\frac{1}{2}$ d., if put out to simple interest at 4 per cent. per annum?
- C** (1) At what rate per cent. simple interest will £936 13s. 4d. amount to £1,157 7s. $4\frac{1}{2}$ d. in $4\frac{1}{2}$ years?
 (2) Find the amount of £212 10s. after $2\frac{1}{2}$ years at $5\frac{1}{2}$ per cent. simple interest.
 (3) What sum put out to simple interest for $3\frac{1}{2}$ years at $5\frac{1}{2}$ per cent. will amount to £689 5s.?
 (4) At what rate per cent. simple interest will £5,000 amount to £7,250 in 18 years?
- D** (1) Find the simple interest on £220 for 7 months, at $3\frac{1}{2}$ per cent. per annum.
 (2) What is the amount of £70 15s. for 3 years 10 months, at $4\frac{1}{2}$ per cent. per annum?
 (3) By how much greater or less than £25 5s. 6d. will be the interest on £321.76875 for 2 years 5 months, at $3\frac{1}{2}$ per cent.?
 (4) What will £563 amount to in 4 years 17 weeks, at 5 per cent.?
- E** (1) Find the simple interest on £34,675 for 17 days, at 5 per cent. per annum.
 (2) What is the simple interest on £6,990 for 7 years 146 days, at $3\frac{1}{2}$ per cent.?
 (3) Find the amount of £106 13s. 4d. from June 15th to September 18th, at $4\frac{1}{2}$ per cent.
 (4) £550 10s. was borrowed on January 1st, 1861, at the rate of 5 per cent. per annum. What sum repaid the debt on the 30th of October in the same year?

COMPOUND INTEREST.

Ex. 102.

- A (1) Find the compound interest on £500 for 2 yrs. at 5 per cent.
 (2) " " £900 " 3 " 5 "
 (3) " " £350 " 3 " 10 "
 (4) " " £520 " 3 " 10 "
- B (1) Find the amount of £750 for 3 years at $12\frac{1}{2}$ per cent.
 (2) " " £840 " 3 " $6\frac{3}{8}$ "
 (3) " " £770 " 2 " $14\frac{1}{2}$ "
 (4) " " £350 " 3 " 20 "
- C (1) (a) Find the compound interest on £10 for $2\frac{1}{2}$ yrs. at 5 per cent.
 (b) Find the amount at compound interest of £830 6s. 8d. for 2 years at 3 per cent.
 (2) Find the compound interest on £450 for 2 years 7 months at 4 per cent.
 (3) What is the amount of £600 for 3 years 125 days at 3 per cent. per annum?
 (4) Find the difference between the simple and compound interest on £520 for $2\frac{1}{2}$ years at $4\frac{1}{4}$ per cent.
- D (1) If the sum of £960 be put out at 5 per cent. per annum, compound interest, paid half-yearly, what will it amount to in $2\frac{1}{2}$ years?
 (2) At what rate per cent. will £750 amount to £1,067 17s. 5 $\frac{1}{2}$ d. in 3 years, compound interest?
 (3) The compound interest on £260 8s. 4d. for three years is £32 10s. 4d.; find the rate per cent.
 (4) Find the compound interest on £100 for 3 years at 100 per cent. per annum. How many years would it take for the simple interest to amount to the same sum at the same rate?
- E (1) Find, with an error of less than a farthing, the compound interest of £45 12s. 6d. for $8\frac{1}{2}$ years at $8\frac{1}{2}$ per cent. per annum.
 (2) In what time will £350 yield an interest of £115 17s. at 10 per cent. compound interest?
 (3) What sum will amount to £1,019 8s. 11 $\frac{1}{2}$ d. in 3 years at $6\frac{3}{8}$ per cent. compound interest?
 (4) In what time will £350 amount to £604 16s. at 20 per cent.?

DISCOUNT.

Ex. 103.

Find the Discount on :—

A	(1)	£68 5s.	due 1 year	hence, at 5 per ct. per an., simp. i
	(2)	£360 2s. 6d.	„ 3 years	„ 2½ „ „ „
	(3)	715 guineas	„ 2½ „	„ 4 „ „ „
	(4)	£467 10s. 9d.	„ 4 „	„ 3½ „ „ „
B	(1)	£694 15s	„ 1½ „	„ 4½ „ „ „
	(2)	£100	„ 2½ „	„ 5½ „ „ „
	(3)	£230 12s. 4d.	„ 4 months	„ 3 „ „ „
	(4)	£3,728 10s. 10d.	„ 9 „	„ 2½ „ „ „
C	(1)	£171	„ 10 „	„ 3½ „ „ „
	(2)	£542 15s. 2d.	„ 15 „	„ 5½ „ „ „
	(3)	£376 6s. 3d.	„ 73 days	„ 1½ „ „ „
	(4)	£850	„ 219 „	„ 2½ „ „ „

- D (1) What is the discount on £1,250, due 9 months hence, at 5½ per cent.?
- (2) Find the discount on £325 4s. 5d., due 2 years and 9 months hence, at 3½ per cent.
- (3) What is the discount on £226 1s. 11d., due 7 months hence, at 4½ per cent.?
- (4) A clerk is directed to calculate the discount on £1,620, due 3 months hence, at 5 per cent.; find the error that would be produced if he were to calculate interest instead of discount.
- E (1) What is the difference between the true and the commercial discount on £135 7s. 6d., due 9 months hence, at 4 per cent.?
- (2) Find the discount on a bill for £237 10s., due 4 months hence, at 4 per cent. simple interest. What would be the amount of the error in this case, if interest were taken instead of discount?
- (3) From a bill of £3 11s. 8d., due 18 months hence, a tradesman deducts 5s. for ready-money payment; what is the rate per cent. per annum at which this discount is calculated?
- (4) If the discount on £1,363 be £203, simple interest being reckoned at 3½ per cent. per annum, when is the sum due?

Note.—In the following examples add Three Days of Grace:—

- (1) Find the true discount on a bill of £380, drawn April 13th, at 4 months, and discounted June 4th, at $4\frac{1}{2}$ per cent.
- (2) What does a banker gain by discounting on July 1st a bill of £150, dated May 22nd, at 3 months, at $4\frac{1}{2}$ per cent.?
- (3) Find the difference between the true and the ordinary discount on a bill of £870, dated March 16th, at 9 months, and discounted April 29th, at 3 per cent.
- (4) A debt is paid June 23rd by a bill dated at 6 months; supposing the bill to be discounted October 14th, the real discount would be £3 10s. Find the amount of the bill, the rate of discount being 5 per cent.

—o—

PRESENT WORTH.

Ex. 104.

1 the Present Worth of:—

£819	due 1 year	hence, at 5 per ct. per an., simp. int
£445 10s.	„ 2 years	4 „ „ „
£165 15s.	„ 3 „	3½ „ „ „
£1,225 10s.	„ 2½ „	3 „ „ „
£295	„ 4½ „	2½ „ „ „
£363 16s. 6d.	„ 3 months	4½ „ „ „
500 guineas	„ 6 „	1½ „ „ „
£138 16s. 8d.	„ 9 „	5½ „ „ „
£370 0s. 3d.	„ 7 „	6 „ „ „
£28 15s. 1d.	„ 8 „	4½ „ „ „
£400	„ 14 „	3½ „ „ „
£318 16s. 3d.	„ 5½ years	5½ „ „ „

- (1) Find the present value of £605 10s. 6d., due 3 years hence, the rate of interest being £4 15s. per cent. per annum.
- (2) What is the present value of a debt of £572, due 8 months hence, at 3·75 per cent., simple interest?
- (3) Find the present worth of £1,296, due 9 months hence, at £10 13s. 4d. per cent. per annum.
- (4) What ready money would a person receive for a debt of £184 15s. 9d., if he allowed a discount of $3\frac{1}{2}$ per cent.?
- 3 (1) What is the present value of £195,585, due 1 year 9 months hence, discount at 6 per cent. per annum?

- (2) Find the present worth of £259 7s., due 4 years hence, at $8\frac{1}{2}$ per cent. simple interest.
- (3) What is the present worth of £226 1s. 11d., due 7 months hence, at $4\frac{1}{2}$ per cent. ?
- (4) If a sum of £1,000 becomes due 3 months hence, what is its present value as commonly calculated, and what as correctly calculated, interest being reckoned at 5 per cent. ?
- F (1) Find the present value of £598 9s. 9d., due at the end of 1 year 115 days, at $2\frac{1}{2}$ per cent.
- (2) What is the present value of £2,100, to be paid in four equal instalments at the end of every fifth year, at 5 per cent. simple interest ?
- (3) If I accept £247 1s. 8d. as present payment for £252 0s. 6d., due 4 months hence, what rate per cent. discount do I allow ?
- (4) Received £456 10s. for a debt of £490 14s. 9d., discount at 5 per cent. per annum ; when should the debt have been payable without discount ?

S T O C K S .

Ex. 105.

- A Find the quantity of stock purchased by investing :—
- (1) £5,440 in the 3 per cents. at 85.
- (2) £2,470 in the $4\frac{1}{2}$ per cents. at 104.
- (3) 300 guineas in the $3\frac{1}{2}$ per cents. at 94 $\frac{1}{2}$, brokerage $\frac{1}{2}$ per cent.
- (4) £7,650 in the 5 per cents. at 95 $\frac{1}{2}$, brokerage $\frac{1}{2}$ per cent.
- B Find the value in sterling money of :—
- (1) £3,500 in the $2\frac{1}{2}$ per cents. at 79.
- (2) £2,075 in the $4\frac{1}{2}$ per cents. at 93 $\frac{1}{2}$.
- (3) £9,850 in the 3 per cents. at 86, brokerage $\frac{1}{2}$ per cent.
- (4) £5,625 in the 4 per cents. at 103 $\frac{1}{2}$, brokerage $\frac{1}{2}$ per cent.
- C Find the annual income arising from the investment of :—
- (1) £2,030 in the 3 per cents. at 87.
- (2) £1,000 in the $2\frac{1}{2}$ per cents. at 96.
- (3) £3,034 15s. in the $4\frac{1}{2}$ per cents. at 76 $\frac{1}{2}$, brokerage $\frac{1}{2}$ per cent.
- (4) 700 guineas in the $3\frac{1}{2}$ per cents. at 91 $\frac{1}{2}$, brokerage $\frac{1}{2}$ per cent.
- D Find the amount that must be invested to produce the following incomes :—
- (1) £330 in the $3\frac{1}{2}$ per cents. at 92.

- (2) £106 6s. 8d. in the $4\frac{1}{2}$ per cents. at $96\frac{3}{4}$.
 (3) £206 5s. in the $2\frac{1}{2}$ per cents. at $78\frac{1}{2}$, brokerage $\frac{1}{2}$ per cent.
 (4) £300 in the $4\frac{1}{2}$ per cents. at $98\frac{1}{2}$, brokerage $\frac{1}{2}$ per cent.
- E** Find the rate per cent. of interest of the following investments:—
- (1) In the 4 per cents. at 90.
 (2) In the $3\frac{1}{2}$ per cents. at $85\frac{1}{2}$.
 (3) In the $5\frac{1}{2}$ per cents. at $103\frac{3}{4}$, brokerage $\frac{1}{2}$ per cent.
 (4) In the $4\frac{1}{2}$ per cents. at $98\frac{1}{2}$, brokerage $\frac{1}{2}$ per cent.
- F** (1) If I invest £46,000 in the 3 per cents. stock at 92, what annual income shall I derive?
 (2) What annual income shall I derive from investing £2,950 in 5 per cent. stock at 104?
 (3) I invest £24,000 in the 3 per cents. at 80, but on the price of stock rising immediately to 85 I sell out; how much do I gain?
 (4) What is the worth of £3,750 stock in the 4 per cent. stock at 92?
- G** (1) I have £8,725 in the 5 per cent. stock at 96, but on the price of stock being likely to fall I sell out; how much ready money do I realise?
 (2) How much 4 per cent. stock at 105 will £8,610 buy?
 (3) If I lay out £5,000 in the purchase of 3 per cent. stock at $89\frac{1}{2}$, to what annual income shall I be entitled?
 (4) How much must be invested in the 3 per cents. at 96 to obtain an income of £400 per annum?
- H** (1) How much must I invest in the 3 per cents. standing at $94\frac{1}{2}$, in order to have an income of £75 5s. per annum?
 (2) A merchant, whose commission is $\frac{1}{2}$ per cent., receives £8,129 9s. 3d. to invest in bank stock at $188\frac{3}{4}$. What amount of stock can he buy?
 (3) What income would be derived from laying out £10,587 10s. in $5\frac{1}{2}$ per cent. stock, standing at $105\frac{3}{4}$, broker's commission being $\frac{1}{2}$ per cent.?
 (4) What amount of Russian 5 per cent. stock at $94\frac{1}{2}$ will £848 5s. purchase, and what will be the interest upon it?
- I** (1) At what price are the Funds when I can buy £500 worth of stock for £401 18s. 4d.?
 (2) What sum invested in the 3 per cents. at $98\frac{1}{2}$ will purchase £7,275 worth of stock?

- (3) A sum of £8,505, invested in the 3 per cents., produces an income of £252; what is the price of the stock?
- (4) If I give a thirtieth part of my income to a charity, what sum will be due from me to the charity six months after investing £1,958 6s. 8d. in the $3\frac{1}{2}$ per cents., standing at par?
- J (1) A person left £100 per annum for ever to a school. What sum must have been invested to purchase this annuity in the $3\frac{1}{2}$ per cents., the stock being at $93\frac{1}{2}$?
- (2) What would be the half-yearly dividend from an investment of £3,300 in the $3\frac{1}{2}$ per cents., made when the stock was standing at 91?
- (3) What sum of money must be invested in $5\frac{1}{2}$ per cent. stock at 83, to enable the possessor to realise an income of £64 3s. 4d. per calendar month?
- (4) If by laying out £2,490 in $3\frac{1}{2}$ per cents. I can get an income of £96 16s. 8d. per annum, what is the price of the stock per cent.?
- K (1) I hold £10,000 stock in the 3 per cents.; I sell out at $94\frac{1}{2}$, and invest the purchase-money in 4 per cent. railway debentures at 105; what change do I make in my income?
- (2) What must be the price of £100 stock in the $3\frac{1}{2}$ per cents., if an annual income of £22,166 13s. 4d. can be secured by investing £560,500 in them?
- (3) What will be the yearly income gained by selling out £5,000 of 3 per cent. stock at 90, and re-investing it in the 4 per cents. at 95?
- (4) A person transfers his capital from a $3\frac{1}{2}$ per cent. stock at 77 to a 4 per cent. stock at $93\frac{1}{2}$; find the increase or decrease per cent. in his income.
- L (1) What fraction of a million of money must be invested in the $3\frac{1}{2}$ per cents., standing at $93\frac{1}{2}$, to produce an income of £61 5s.?
- (2) A man buys 50 shares in a concern at the rate of £20 10s. per share, and 100 more at £7 15s. per share. The half-yearly dividend on the whole is 3s. 4d. per share. What interest per cent. per annum does he realise?
- (3) A person sells out £3,965 from the 3 per cent. stocks at 74, and re-invests in $5\frac{1}{2}$ per cents. at 143. What is his gain or loss in annual income?
- (4) What income would be derived from shares paying 7 per cent., purchased (at par) with the sum accruing from the sale of £9,625 stock at $92\frac{3}{8}$ per cent.?

- M (1) Find the alteration in a man's income caused by transferring £3,200 stock from the 3 per cents., standing at $86\frac{1}{4}$, to 4 per cent. stock at $114\frac{1}{4}$, the brokerage being $\frac{1}{8}$ per cent. on each transaction.
- (2) By investing a certain sum in the 3 per cents. at $91\frac{1}{4}$, a person obtains an income of £464; what would he obtain by investing an equal sum in the 4 per cents. at 96?
- (3) What incomes will be derived from (a) £5,500 of $3\frac{1}{4}$ per cent. stock purchased at par, and (b) £5,500 invested in the same stock at $102\frac{3}{4}$, and what fraction is the lesser income of the greater?
- (4) If $3\frac{1}{4}$ per cent. Consols are at $86\frac{3}{4}$, and $4\frac{1}{4}$ per cent. railway stock at $94\frac{1}{4}$, which is the better investment, and what amount should be invested in the Consols so as to obtain an income equal to that which would arise from £1,050 invested in the railway stock?
- N (1) A man invested 9,000 guineas in the 3 per cents. at 81, and sold out when they had sunk to $67\frac{1}{4}$; what did he lose by the transaction?
- (2) If the 3 per cent. Consols are at $90\frac{3}{4}$, what sum must I invest in order to secure from them a yearly income of £470, after paying an income-tax of 5d. in the £, brokerage being $\frac{1}{8}$ per cent.?
- (3) How much stock can be purchased by the transfer of £2,000 stock from the 3 per cents. at 90, to $3\frac{1}{4}$ per cent. stock at 96, and what change in annual income will be produced by the transfer?
- (4) A person's salary is £450 a year. He has £750 10s. in the 3 per cents., £500 railway debentures bearing $4\frac{1}{4}$ per cent. interest, and £385 15s. India 5 per cent. stock. What does he pay a year for income-tax at 5d. in the £?
- O (1) A speculator, investing in the $3\frac{1}{4}$ per cents., obtains 4 per cent. for his money, after paying $\frac{1}{8}$ per cent. for brokerage. At what rate does he buy in?
- (2) I am required to invest in the $3\frac{1}{4}$ per cents., standing at $93\frac{3}{4}$, a sum sufficient to provide for the payment of the rent of a house let to me at £57 15s. per quarter. What sum must I invest, brokerage $\frac{1}{8}$ per cent.?
- (3) I invest £18,150 in the 3 per cents. at $90\frac{3}{4}$, and on their rising to 91 transfer my money to the $3\frac{1}{4}$ per cents. at $97\frac{1}{4}$; what increase do I make thereby in my annual income?

- (4) A capitalist invested £6,940 in the 3 per cent. Consols at $86\frac{1}{2}$, and sold out when they had risen $3\frac{1}{2}$ per cent. What was his gain, the brokerage on each transaction being $\frac{1}{2}$ per cent.?
- P (1) If I possess £1,000 in the 3 per cent. Consols, purchased at $96\frac{1}{2}$, and sell out when they have fallen to $82\frac{1}{2}$, how much do I lose on my purchase money, and what interest shall I receive for the sum realised by the sale, if I invest it in $5\frac{1}{2}$ per cent. railway stock at par?
- (2) What amount should be invested in a 5 per cent. stock at $96\frac{1}{2}$, to produce the same income as £2,120 invested in a 3 per cent. stock at 77?
- (3) Possessing a bill for £1,336 11s. 3d., due $3\frac{1}{2}$ years hence, discount at the rate of 5 per cent., I realise its present value, [and invest in the $3\frac{1}{2}$ per cents. standing at 91. What will be my income?
- (4) What should be the price per £100 of 3 per cent. stock in order that, after deducting an income-tax of 4d. in the £, it may yield $3\frac{1}{2}$ per cent. interest to an investor?
- Q (1) Required an annual income of £460; I have my choice of investing in 3 per cent. stock at $87\frac{1}{2}$, or in shares costing £233 each, on each of which a dividend of £7 18s. 4d. is paid annually; what sum must I invest in the former, and what in the latter, to produce the required income?
- (2) When the 3 per cent. Consols are at $89\frac{1}{2}$, what must be the price of the India 5 per cents., in order that the same income may be realised after transferring from the former to the latter, $\frac{1}{2}$ per cent. brokerage being charged both on the sale and purchase of the stock?
- (3) Which of the following stocks is most profitable for investment:—the 3 per cents. at $91\frac{1}{2}$, the $3\frac{1}{2}$ per cents. at $108\frac{1}{2}$, the 4 per cents. at 118? Find the yearly income produced by investing £5,217 16s. 3d. in the most advantageous of the three.
- (4) I sold out of the 3 per cents. at 96, and invested the sum accruing in railway 5 per cent. stock, thereby increasing my income 50 per cent. What was the price of the railway stock?
- R (1) What sum of money invested in $3\frac{1}{2}$ per cent. stock at $87\frac{1}{2}$ would produce 50 guineas per annum, and what increase of income would be obtained by selling out the stock at par, and investing in stock at 105, paying $5\frac{1}{2}$ per cent.?

- (2) A sum is laid out in the 4 per cents., standing at $102\frac{1}{2}$, and one half-year's dividend received upon it; the stock is then sold at $105\frac{3}{4}$, and the whole increase of capital, including the half-year's interest, is £253 10s. Find the original sum.
- (3) Ten thousand pounds stock in the 3 per cents. is sold out at $92\frac{3}{4}$, paying the usual brokerage; the whole is then re-invested in railway 6 per cent. £20 shares, when they are at £5 premium. Find the alteration in income.
- (4) The 3 per cents. are at 93; the stock falls by a certain amount. Two sums of £8,184 are invested before and after the fall; what is the amount of the fall, if the difference of income of the two investments is £15?



PROFIT AND LOSS.

Ex. 106.

- A (1) For how much must an article which cost 10d. be sold so as to gain 25 per cent.?
- (2) If a tradesman gain 5s. 6d. on goods sold for 22s., what does he gain per cent.?
- (3) I buy goods for £12 17s. 6d., and sell them at a loss of 10 per cent.; find the selling price.
- (4) An article which cost 8s. $10\frac{1}{2}$ d. has to be sold for 8s. 6d.; what is the loss per cent.?
- B (1) By selling goods for £5 12s. 6d. I lose 10 per cent.; what was the prime cost?
- (2) What was the cost price of an article which, when sold for £90, realised a gain of 20 per cent.?
- (3) I sold a quantity of hay for £50, losing $33\frac{1}{3}$ per cent.; for what should I have sold it to receive three times as much as it cost me?
- (4) By selling 26 yards at 3s. $4\frac{1}{2}$ d. per yard, a draper gains 6s. 6d.; what was the prime cost per yard, and what is the gain per cent.?
- C (1) Bought sugar at £2 5s. 10d. per cwt. Required the selling price per lb. when it is sold at a gain of 12 per cent.
- (2) A man invests £2,340, and makes £2,587 of it; what does he gain per cent.?
- (3) If I gain $11\frac{1}{4}$ per cent. on my outlay, what do I gain on articles which cost me £2 1s. 8d.?

- (4) I bought goods for £4 5s.; for what must I sell them to gain $17\frac{1}{2}$ per cent.?
- D (1) An ironmonger bought nails at 18s. 4d. per cwt., and sold them at 3d. per lb.; what did he gain or lose per cent.?
- (2) If I buy 3 tons of cheese at £71 5s. per ton, at what price per cwt. must I sell it so as to gain 20 per cent.?
- (3) I sell 185 bushels of wheat for £53 3s. 9d., thus gaining 15 per cent. At what price per bushel did I buy the wheat?
- (4) If an article which cost 18.75s. be sold at a gain of 16 per cent., what is the selling price?
- E (1) I exchange $\frac{1}{4}$ cwt. of sugar at $4\frac{1}{2}$ d. a lb. for 7 lbs. of tea at 3s. 6d. a lb.; what is my gain or loss per cent.?
- (2) If iron, sold at the rate of £4.9875 per ton, yields a profit of 17 per cent., what must have been the expense of raising it?
- (3) If $2\frac{1}{2}$ per cent. be lost by selling bacon at $6\frac{1}{2}$ d. per lb., what did it cost per cwt.?
- (4) If tea be bought at £.1 per lb., and sold at $\cdot 1$ of a guinea, what is the gain per cent.?
- F (1) A merchant lost 25 per cent. in selling goods which he had bought for £9, but at the same time gained 45 per cent. on an article which cost £12 10s. How did his account then stand?
- (2) A plumber sold 4 tons 16 cwt. of lead for £109 2s. 6d., and gained $12\frac{1}{2}$ per cent. by the sale; what did the lead cost him per cwt.?
- (3) How many copies of an engraving must a picture dealer sell, at £1 11s. 6d. per copy, so as to realise $51\frac{1}{2}$ per cent. on an outlay of £250?
- (4) If I buy 2,048 yards of linen at 3s. $2\frac{1}{2}$ d. per yard, and sell the whole for £359 6s. 8d., required the whole gain, and the gain per cent.
- G (1) A man bought 396 sheep at £1 7s. 6d. each, and after paying $\frac{1}{4}$ of his outlay for their keep, exchanged them for 37 cows, which he sold at £15 per head. What did he gain per cent.?
- (2) A sells goods to B for £115 19s. 2d., and gains 10 per cent. on the price he originally paid for them. B sells the same goods again, and loses 10 per cent. At what price did A buy the goods, and at what price did B sell them?

- (3) A woman bought oranges at the rate of 8 for 5*d.*, and sold them so as to gain 1½*d.* on each dozen. (1) What did she charge for each orange? (2) What did she gain per cent.?
 - (4) On selling 4 dozen cucumbers for 13*s.* a profit was made equal to three-tenths of the money laid out in buying them. What ought the price charged per cucumber to the customer to have been, in order that 60 per cent. should be gained?
- H
- (1) The sales of a bookseller amount to £25,000; one-fourth of the sales are made at a profit of 25 per cent., seven-tenths at a profit of 16⅔ per cent., and the remainder at a loss of 25 per cent. Find the cost of the stock sold.
 - (2) Bought 37 yards of cloth at 13*s.* 6*d.* per yard; sold 34½ yards at 16*s.* per yard, and the remainder at 2*s.* 6*d.* per yard below prime cost; what was gained or lost per cent.?
 - (3) A tradesman's prices are 25 per cent. above cost price. If he allows a customer 12 per cent. on his bill, what profit does he make?
 - (4) A man buys land at £42, and having built upon it, sells the land and houses so as to gain 20 per cent. on his whole outlay, and receives £9,004 16*s.* How much did he spend on building?
- I
- (1) If by selling a cow for £20 I lose 20 per cent., for what must I have sold it so as to gain 10 per cent.?
 - (2) If by selling a house for £1,200 I lose 5 per cent. on my outlay, what shall I gain per cent. by selling it for £1,500?
 - (3) Selling a pistol for 19*s.* I lost 5 per cent.; what should it have been sold for to gain 12½ per cent.?
 - (4) If 40 per cent. be gained by selling sugar at 1*s.* 3*d.* a lb., what per cent. will be gained by selling it at 5-0238095 guineas per cwt.?
- J
- (1) By selling a yacht for £994 10*s.* I gain 17 per cent. on its cost price; what should I have received for the yacht if my loss had been 17 per cent.?
 - (2) Sold goods for £225 10*s.* with a gain of 12⅔ per cent.; how much per cent. would have been gained or lost by selling them for £187 10*s.*?
 - (3) At what price per yard must cloth be sold to gain 17 per cent., if by selling 109 yards of it for £46 6*s.* 6*d.*, 8 per cent. be gained?

- (4) A person speculated with £1,000 and gained 10 per cent.; speculated again with the amount and lost 10 per cent.; again speculated and gained 10 per cent.; and again, and lost 10 per cent.; how much was he then worth?
- K (1) If 3 per cent. more be gained by selling a horse for £83 5s. than by selling it for £81, what was the original price of the horse?
- (2) A draper sells 104 yards of lace for £188 $\frac{3}{4}$, and thereby loses 10 per cent. At what price per yard should he sell the lace in order to gain 8 per cent.?
- (3) How much per cent. should I gain or lose in giving 10*d.* for a French franc, in the exchange 25·57 francs for the £ sterling?
- (4) A man embarks his capital in four successive ventures. In the first he clears 100 per cent., and in each of the others he loses 20 per cent. What is his gain or loss per cent. on his original outlay from these speculations?
- L (1) If 6 per cent. be lost by selling goods at £425 7*s.*, what would be gained per cent. by selling at £565 12*s.* 6*d.*?
- (2) A coal-dealer buys two equal lots of coal at the same price; he retails them at a profit of 13 and 14 per cent. respectively, making a total profit of £168 17*s.* 8*d.*; what did he pay for each lot of coals?
- (3) A man buys 4,380 yards of cloth at 3*s.* 4*d.* per yard; if he sells $\frac{2}{3}$ at a gain of 20 per cent., and the whole at a profit of £187 16*s.* 8*d.*, what is the gain per cent. on the other two-thirds?
- (4) A stationer bought 50 reams of paper, hoping to sell at £1 2*s.* 6*d.* per ream, thereby making 8 per cent. profit on the prime cost; but 5 reams being damaged, what did he gain or lose per cent. by selling the remainder at the same rate?
- M (1) If a grocer mixes 17 lbs. of tea, worth 4*s.* per lb., with 25 lbs. worth 4*s.* 8*d.*, and sells the whole at 5*s.* 4*d.* per lb., what is the total gain, and what is the profit per cent.?
- (2) A grocer buys sugar at 7*d.* and 10*d.* per lb., and mixes them in the proportion of 3 to 5; what will he gain or lose per cent. if he sells the mixture at 9*d.* per lb.?
- (3) If teas at 2*s.* 9*d.*, 3*s.* 3*d.*, and 2*s.* 4*d.* per lb. be mixed in equal quantities, and the mixture sold at 16 guineas per cwt., what will be the gain or loss per cent.?

- (4) A merchant bought wines at 30s., 40s., and 50s. per dozen. These he mixed in the proportion of 5, 4, and 3, and sold the mixture at 57s. 6d. per dozen. What was his gain per cent.?
- N (1) A person buys coffee at £5 12s. 6d. per cwt., and chicory at £2 5s. 5d., and mixes them in the proportion of 2 of chicory to 5 of coffee. If he retails the mixture at 1s. 2½d. a pound, what is his gain per cent.?
- (2) How many lbs. of tea at 2s. 1d. a lb. must be mixed with 42 lbs. at 1s. 8d. a lb., so that the mixture may be worth 1s. 10d. a lb.?
- (3) In what proportions must tea at 3s. and 3s. 6d. a lb. be mixed, in order to sell at 3s. 8d. a lb., and gain 10 per cent.?
- (4) A merchant buys some tea at 2s. 3d. per lb., and some at 3s. 6d.: in what proportion must he mix them, so that by selling the mixture at 4s. per lb. he may realise 20 per cent.?
- O (1) A grocer buys 106 lbs. of tea at 8s. 4d. per lb., 75 lbs. at 5s. 2d., and 94 lbs. at 5s. 5d. At what rate per lb. must he sell the mixture of these teas in order to gain 10 per cent.?
- (2) By selling eggs at 8 a penny I gain 5 per cent. What do I gain or lose per cent. by selling them at the rate of 25 for 6d.?
- (3) A bankrupt's stock was sold for £539 10s. at a loss of 17 per cent. on the cost price. Had it been sold in the ordinary course of trade it would have realised a profit of 20 per cent.; for how much below the trade price was it sold?
- (4) A market woman in the morning sells her butter at 15 per cent. profit; in the afternoon the price of butter rises 1d. per lb., and she then makes 20 per cent. profit. What did the butter cost her per lb.?
- P (1) A merchant sells 72 qrs. of grain at a profit of 8 per cent., and 37 qrs. at a profit of 12 per cent.; but if he had sold the whole at a uniform profit of 10 per cent. he would have received £2 14s. 3d. more; what was the price which he paid per quarter for the grain?
- (2) A person sold goods at a profit of 5 per cent. If bought at 5 per cent. lower, and sold at 1s. less, the profit would have been 10 per cent. Find the cost price.
- (3) A tradesman sold some goods at 15 per cent. above the price at which he bought them, and the two prices together amounted to £738 3s.: find the price at which the goods were bought.

- (4) I buy a horse with $\frac{5}{6}$ of my money, and sell it again so as to gain 15 per cent. I now invest all but 15s. of what I got for the horse, in 3 cows, one of which dying, I sell the remaining two for £96, thus losing 20 per cent. How much had I before buying the horse?
- Q (1) A grocer buys some goods, of which he retails $\frac{1}{2}$ at a gain of 5 per cent., $\frac{1}{3}$ at a gain of 10 per cent., and the remainder at a gain of 20 per cent.; the whole of his sales amounting to £67 15s., find the price at which he bought them.
- (2) A labourer's wages some years ago were 15s. 2d. per week, and he could save 1s. weekly; his wages are now 18s. 6d., but the cost of living has increased $17\frac{1}{2}$ per cent.; what can he save now?
- (3) Bought a quantity of quills at 4s. 7d. a hundred, and sold them so as to gain $\frac{1}{8}$ of the *selling price*; what was the *selling price*, and what was the profit per cent.?
- (4) If I sell a horse for £62 and a cow for £26, I gain 10 per cent. on the original cost of both: but if I sell the horse for £63 and the cow for its original price, I lose 10 per cent.; find the original cost of each.

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PERCENTAGES.

Ex. 107.

- A (1) Express fractionally, in lowest terms, and also decimally, (a) 2 per cent., (b) $\frac{2}{3}$ per cent., (c) 5 per cent., (d) 9 per cent., (e) $12\frac{1}{2}$ per cent., (f) 125 per cent.
- (2) What *percentage* respectively of the £ sterling is each of the following—10s., 5s., 2s. 6d., 2s., 1s. 6d., 4d., 3d., 1d., $\frac{1}{2}$ d., and $\frac{1}{4}$ d.?
- (3) What is the percentage on 378 at 5, 17·5, 20·625, and $\frac{1}{3}$?
- (4) How much per cent. is 7 of 16, 69 of 300, 187·98 of 56,894?
- B (1) In standard gold, eleven parts out of twelve are pure gold; how much per cent. is dross?
- (2) What percentage of £20 is 7s. 6d., and what percentage is $\frac{1}{10}$ of a gallon of $\frac{1}{8}$ of a barrel?
- (3) What number does 7·875 per cent. on a million and three-quarters amount to?

- (4) A sum of 30*s.* is divided among four boys in the proportion of 35 per cent. to A, 30 per cent. to B, 23 $\frac{3}{4}$ per cent. to C, and the remainder to D. How much does each receive?
- C (1) What will be the purchase money of a row of houses producing a rental of £2,328 13*s.* 4*d.*, at the rate of 8 $\frac{1}{2}$ per cent.?
- (2) The population of a country is at present thirty-two millions; if it increases at the rate of 5 per cent. every year, what will it be at the end of 5 years?
- (3) A house and land were sold for £8,963, and the owner received £8,626 17*s.* 9*d.* as the net proceeds of the sale. What was the rate of commission per cent.?
- (4) What (*a*) decimal, and (*b*) percentage of 1 $\frac{1}{2}$ lbs. troy is 1 $\frac{1}{2}$ dwt.?
- D (1) In a school of 500 children, 24 per cent. are presented for examination in history, and of these 26 $\frac{6}{10}$ per cent. fail. How many pass?
- (2) A barrel of beer lost by leakage 8 per cent. How many pints of beer were left in the cask?
- (3) If the proportion of nitrogen in the air is 79 per cent., and of oxygen is 20 per cent., what quantity of nitrogen and oxygen respectively will there be in an apartment containing 908,500 gallons of air?
- (4) If in a school of 360 children, 27 play truant and 63 are sick, what percentage of non-attendance is due to truancy and sickness respectively?
- E (1) If an army, when reduced 15·8 per cent. by sickness, number 8,841 men, what was the original number of the army?
- (2) In a school of 250 children, all examined, 70 fail in arithmetic, 50 in writing, and 20 in reading; what is the percentage of *passes* in each subject?
- (3) If 1,185 parts of copper be added to 715 parts of tin and 100 parts of zinc, what is the percentage of each metal in the compound?
- (4) A farmer having 37 $\frac{1}{2}$ score of sheep sold 8 per cent. of them to A, 90 of them to B, and 3 $\frac{1}{2}$ per cent. of the remainder to C. How many sheep had he left?
- F (1) The population of a town in 1857 was 15,786, and in 1877 was 19,670; what was the increase per cent.?

- (2) In a population of 85,000 the death rate is 1.5 per cent. per annum; .6 of the deaths are due to disease, .06 to old age, .18 to accidents, and the remainder to unknown causes. How many of the deaths are assignable to each cause?
- (3) A certain official receives a salary of £1,250 a year. His chief clerk's salary is 44 per cent. of his own, and his junior clerk's 78 per cent. of the senior's; what is the junior clerk's salary per week?
- (4) If the population of a country increased from 2,800,000 to 3,500,000 in $3\frac{1}{4}$ years, what is the rate of increase per cent. per annum?
- G (1) A house, which cost £1,500, lets for £65 a year; the expenses for insurance, &c., amount to $1\frac{1}{2}$ per cent. on its cost; what rate of interest does it pay?
- (2) What was the original population of an island, which was reduced 40 per cent. in $1\frac{1}{4}$ years by a plague carrying off 25 inhabitants on an average in a week?
- (3) A person possesses one-seventh of a ship worth £6,600, and insured for 91.25 per cent. of its value; what amount of damage will he sustain in case of the ship being lost?
- (4) If a tax of 12 per cent. on the income of a country yields £5,200,000, how much will an income tax of 5d. in the £ produce?
- H (1) Receiving £56875 per week of 6 days, and spending 66.6 per cent. of his wages, how many days more or less than a year of 52 weeks will a boy take to save £10?
- (2) If I pay 6 per cent. of 90 guineas for a ton of hay, what percentage of 100 guineas should I pay for 9.75 tons?
- (3) The net income of an estate, after deducting 10d. in the £ for income tax, and 4 per cent. on the remainder for expenses of collection, is £437; what is the gross rental?
- (4) The standard silver coin of this realm is made of a metal of which 92.5 per cent. is pure silver, and the rest alloy. Out of 1 lb. Troy of this mixed metal are coined 66s. What is the value at the Mint of an oz. of standard silver, and what of an ounce of pure silver, and what quantity of alloy is there in a 5s. piece?
- I (1) In 1879 the number of elementary schools in England and Wales was 17,325, containing 2,647,525 children in average attendance. In 1880 the number of schools was 17,743, containing 2,796,985 children. Find the increase per cent. in the number of schools, and in the average attendance.

- (2) How much ore must be raised in order that losing $42\frac{1}{2}$ per cent. in roasting, and $\frac{1}{5}$ of the residue in smelting, there may result 506 tons of true metal?
- (3) The goods on board a shipwrecked vessel were damaged 39 per cent., and the repairs of the vessel cost £7,000. The ship was worth $1\frac{1}{4}$ times her freight, and the ship and freight together were worth £90,000. My share of her being $\frac{1}{100}$ part, what money do I lose by the wreck?
- (4) Between 1821 and 1831 the population of a certain town increased by 24 per cent., and in the last-named year amounted to 62,093; what was the population in 1821?
- J (1) What number is that from which, if 5 per cent. be subtracted, $\frac{1}{5}$ of the remainder is equal to 17?
- (2) A reduction of 20 per cent. in the price of apples would enable a purchaser to obtain 120 more for a sovereign. What may the price be before reduction?
- (3) If $\frac{1}{5}$ of an estate be worth 200 guineas, and the value of the estate be increased .075 per cent. by improvements find the value of $\frac{3}{4}$ of the improved estate.
- (4) The West Riding contains 1,708,026 acres, and the county of Durham 622,476 acres; their populations being respectively 1,507,511 and 509,018; which is the more thickly populated, and by how much per cent.? (Answer to two places of decimals.)
- K (1) If an oz. of wrought silver be worth 5s., what percentage of 1 lb. Troy should be the weight of a cup for which I am asked to pay £2 16s. $4\frac{1}{2}$ d.?
- (2) What must be the sum insured at $4\frac{3}{4}$ per cent. on goods worth £427 15s. 3d., so that in case of loss their owner may recover their value, together with the premium paid?
- (3) In 1878 the number of deaths in a certain kingdom was 391,369; the decrease per cent. was 8·18103 from the preceding year; what was the number of deaths in 1877?
- (4) The proportion of unpaid letters to the whole number posted in a certain district was 8 per cent., and of the paid letters 29 per cent. carried more than one stamp, 20 per cent. a halfpenny stamp, and the remainder a penny stamp. How many were there posted with a penny stamp, if the whole number of letters was 450,000?

PROPORTIONAL PARTS.

Ex. 108.

- A (1) Divide 2,856 into two parts, in the proportion of $\frac{1}{2}$ and $\frac{3}{4}$.
- (2) The cost of labour in producing a certain article was £18 19s. 11d. It was made by 5 persons who severally spent two, three, four and a half, six, and eight days upon it. How should the money be divided among them?
- (3) Three men, A, B, C, joined in partnership. A put into the business £9,700, B £7,800, and C £6,500; how should they divide a profit of £5,000?
- (4) A poor rate, amounting to £1,000, was required from four villages with 530, 460, 720, and 690 inhabitants respectively; what sum had each village to pay?
- B (1) The sum of 11s. 1½d. was divided among four persons, in the ratios of $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$. What was the share of each?
- (2) A bankrupt owes A £256 6s. 8d., B £208 10s., and C £141 13s. 4d.; his estate is worth £421 1s.: how much will A, B, C receive respectively?
- (3) Divide seven guineas between A and B, so that B's share may be $\frac{1}{11}$ of A's.
- (4) Three men hold a farm in common; one pays £97, another £79, and the third £100, as their shares of the rent. A rate of £34 10s. is levied on the farm; what is each man's portion?
- C (1) Find the value of $\frac{2615384}{1000000}$ of £6 10s., and divide it among three persons, so that the first shall have twice as much as the second, and the second twice as much as the third.
- (2) Divide £11,875 among A, B, and C, so that as often as A gets £4, B shall get £3, and as often as B gets £6, C shall get £5.
- (3) The sums invested in a business by two partners are £5,500 and £3,000; the profit for nine months is £1,275; what will be the share of each, and what is the rate of gain per cent. per annum?
- (4) A, B, C commence business. A brought £175, B £210; they gained £422 10s., of which C's share was £172 5s. What amount did C put into the business?

- D (1) A field of grass is rented by two persons for £27; one keeps in it 15 oxen for 10 days, and the other 10 oxen for 21 days; find the rent paid by each.
- (2) A and B enter into partnership; A contributes £3,000 for nine months, and B £2,400 for six months. They gain £1,150; find each man's share of the gain.
- (3) Three cowkeepers hire a pasture for £35 7s. 6d. for 26 weeks. During the time A puts 7 cows in it for 13 weeks; B 14 cows for 9 weeks; and C 3 cows for 22 weeks: how should they divide the rent?
- (4) D and G enter into partnership, D putting in £587 10s. for a year, and G £3,180 for 7 months. They clear £350. What is each partner's share of the gain?
- E (1) Three persons rent a field for £60 10s.; the first puts in 5 sheep for $4\frac{1}{2}$ months, the second 8 sheep for 5 months, and the third 9 sheep for $6\frac{1}{2}$ months: what share of the rent should each pay?
- (2) A and B enter into partnership, A contributing £500 and B £300; at the end of 9 months they take C as a partner, and he brings £1,000 into the business. The profits, £2,000, being divided at the end of another 9 months, what share did each partner receive?
- (3) A and B invested £2,000 each in business; after 9 months A invested £1,000 more. At the end of the year the net profit was £1,183 1s. 10 $\frac{1}{2}$ d.; what is the share which each ought to receive?
- (4) A, B, and C join their capitals, which are in the proportion of $\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{4}$. At the end of 4 months A withdraws half of his capital, and at the end of 9 months more they divide a profit of £284; what should each receive?
- F (1) A bankrupt owes £2,085, of which £235 is due to A, £325 to B, £525 to C, and the rest to D. How much must he pay in the £, that D's receipts may be what C's ought to have been, and how much will his other creditors have each to receive?
- (2) Divide £350 into four shares, which shall have the same ratio to one another as the cubes of 1, 2, 3, 4 respectively.
- (3) A and B invest money in a business, A putting in $\frac{3}{4}$ of the sum invested by B. At the end of 7 months A withdraws $\frac{1}{4}$ of his capital, and at the end of 9 months B withdraws $\frac{1}{4}$ of his. The profits at the end of the year are £132 12s.; how should they be divided?

- (4) Divide £64 among A, B, C, so that A may have three times as much as B, and C may have one-third of what A and B have together.
- G (1) Divide a legacy of £2,375 4s. 2d. among a son, a wife, and a daughter, so that the son's share shall be three times the wife's, and the wife's three times the daughter's.
- (2) Divide £10,000 among A, B, C, so that A may have half as much again as B, and B a third as much again as C.
- (3) A guinea is divided between A, B, and C. A's share is $\frac{2}{3}$ of B's, but it is also $\frac{2}{3}$ of B's and C's together; how was the guinea divided?
- (4) A carries on a business for 3 months when B joins him, and they both have, at the end of six months more, made a profit of £115. B's original capital having been $\frac{2}{3}$ of A's, and A's capital having been $2\frac{1}{3}$ of the profits gained, how ought these profits to be divided between A and B?
- H (1) Divide 16s. 8½d. among A, B, C, D, so that A's share may be $\frac{2}{5}$ of D's, C's share $\frac{2}{5}$ of A's, and B's share the sum of A's and C's.
- (2) £1,000 was divided among A, B, and C in such a way that B had $\frac{2}{3}$ of A's share, and C had $\frac{1}{3}$ of B's share; what was the share of each?
- (3) If a property is divided into four shares which are to each other in the ratios of $\frac{2}{3} : 3 : 4\frac{1}{2} : 5\frac{1}{2}$, and the third share is £789 5s. 3d., what is the value of the whole property?
- (4) A, B, and C enter into partnership with capitals which are as 1 : 2 : 3. In six months A withdraws one-half of his capital, but restores it after three months more. At the end of four months from the commencement B withdraws one-third of his capital, and two months after C adds twice as much as B withdrew. How should a profit of £658 10s. be divided at the end of a year?

AVERAGES.

Ex. 109.

- A (1) Find the average of 15½, 36½, 17½, 0, 10½, 74½, 28½, and 33.
- (2) If the duty on an article be in five successive years 19½, 20, 17½, 23½, and 18½ per cent., what is the average yearly duty per cent.?

- (3) A mechanic, paid at the rate of 5*d.* per hour, does 7 hours' work on Monday, 11 on Tuesday, 9½ on Wednesday, and 11½ on Thursday; what are his average earnings per day?
- (4) Three fields are bought for £240, £270, and £470 respectively; they contain 4ac. 8ro., 5ac. 2ro., and 9ac. 8ro. respectively; find the average cost per acre, and the highest-priced field.
- B** (1) Find the average cost of five houses, the first costing £2,057·85, the second £3,909·75, the third £1,111·95, the fourth £1,000, and the fifth £287·075.
- (2) The population of five parishes being 1,236, 452, 864, 516, and 3,430 respectively, find what the population of a sixth parish must be, that the average population of the six may be 1,256·5.
- (3) If the duty on hops be 2*d.* per lb., and the whole duty was in three consecutive years £241,008, £231,090, and £229,902, what was the average yearly produce of hops in those three years?
- (4) If 50 quarters of wheat be sold for 77*s.* 8*d.* per quarter, and 100 quarters for 78*s.* 3*d.* per quarter, what is the average price per bushel?
- C** (1) What is the average value of 11,328 articles, for ¼ of which I pay at the rate of 3 of 7*s.* 6*d.* each, for ¼ at the rate of 3 of 7*s.* 6*d.*, and for ½ at the rate of 03 of 7*s.* 6*d.*?
- (2) Find the average age (in years) of 25 boys, one of whom is 17 years old, two 16, four 15½, one 14½, five 13½, ten 12½, and two 10 years.
- (3) Three schools educate 75, 33, and 31 children at an annual average cost of £2 10*s.*, £3 10*s.*, and £3 15*s.* respectively; they are united, and an annual saving is thereby effected of £141 5*s.* Find the annual average cost after their union.
- (4) A man's weekly wages are 43*s.*; the keep of his family of seven costs him 3*s.* 9½*d.* per head per week; in 27 weeks he has saved £3 1*s.* 10½*d.* What is the average weekly amount of his other expenses?
- D** (1) A farmer mixes wheat; 9½ qrs. at 38*s.* 6*d.*, the same quantity at 40*s.* 6*d.*, and at 42*s.* 9*d.* per quarter; and 24½ qrs. at 45*s.*, and the same quantity at 47*s.* per quarter. What is the average price of the mixture?

- (2) An upholsterer bought 4 bales of carpeting: the first containing 1 piece of 12 yards, at 6s. 2d. a yard; the second, 8 pieces of 19 yards, at 2s. 6d. a yard; the third, 3 pieces of 29 yards, at 3s. 4d. a yard; and the fourth, 8 pieces of 30 yards, at 5s. 1d. a yard. What was the average length of the pieces, and the average cost per yard?
- (3) In a class of 25 children, 19 have attended during the week; 5 have attended for 5 days; 6 for $4\frac{1}{2}$; 3 for 4; 2 for $3\frac{1}{2}$; 1 for 3; 1 for 2; 1 for $\frac{1}{2}$ day. Find the average number of days attended by each child in the class.
- (4) What is the average annual income of 5 persons, of whom A gets the interest of £15,520 in $3\frac{1}{2}$ per cents. at par, B 2s. 6d. a day, C a guinea a week, D $\frac{1}{4}$ of £5 a calendar month, and E £1,000 a year?
- E (1) What is the average height of 107 recruits, if 49 of them are 5 feet 6 inches high; 37, 5 feet $7\frac{1}{2}$ inches; 13, 5 feet $8\frac{1}{2}$ inches; 6, 5 feet 10 inches; and 2, 6 feet? What percentage of them would have been rejected if the standard had been 5 feet 8 inches?
- (2) A bookseller bought $8\frac{1}{2}$ dozen books at 1s. 8d. each, $6\frac{1}{2}$ dozen at 2s. 7d. each, and 94 at 32s. 6d. per dozen; at what average price must he sell them in order to gain 10 per cent. on the whole transaction?
- (3) A steamer is $14\frac{1}{2}$ days on a voyage. For the first three days she makes 13 miles an hour; in the next six and a half days she improves upon that speed 17 per cent.; and for the remaining time she runs 390 miles in the 24 hours. What distance has she gone, and what was her average speed per hour?
- (4) The populations of three towns in 1871 were 20,700, 17,940, and 13,675, and in 1881 they had increased 9, 10, and 12 per cent. respectively; find the average population of the three towns in 1881.
- F (1) A person's annual average expenditure from 1860 to 1880 inclusive was £258 16s. 3d. He spent £216 18s. in 1860, and £298 5s. 6d. in 1881. What was his average annual expenditure from 1861 to 1881 inclusive?
- (2) The average price of a quarter of wheat for 25 years was 57s. 8d.: for the first eight years the average price was 61s. $7\frac{1}{2}$ d., for the next seven years 59s. 2d., and for the next six years 54s. $10\frac{1}{2}$ d.; find the average price of the last four years.

SQUARE ROOT.

Ex. 110.

Extract the Square Root of,—

A	B	C	D	E	F
(1) 144	(1) 1,764	(1) 10,201	(1) 50,625	(1) 272,484	(1) 525,625
(2) 256	(2) 2,809	(2) 12,100	(2) 94,249	(2) 305,809	(2) 692,224
(3) 289	(3) 3,844	(3) 14,641	(3) 92,416	(3) 308,025	(3) 788,544
(4) 441	(4) 5,625	(4) 15,625	(4) 99,225	(4) 106,929	(4) 828,100
(5) 625	(5) 7,056	(5) 17,161	(5) 176,400	(5) 416,025	(5) 11,566,801
(6) 961	(6) 9,025	(6) 46,225	(6) 187,489	(6) 443,556	(6) 9,120,400
G	H	I	J	K	L
(1) .0001	(1) .0121	(1) .000001	(1) .001764	(1) .000289	(1) .00000361
(2) .0009	(2) .0484	(2) .000144	(2) .000081	(2) .000361	(2) .00010201
(3) .0025	(3) .1089	(3) .000121	(3) .002601	(3) .00000256	(3) .00040804
(4) .0049	(4) .1936	(4) .000004	(4) .003721	(4) .00000081	(4) .00255025
(5) .0081	(5) .3025	(5) .000441	(5) .001156	(5) .00000049	(5) 9.006001
(6) .01	(6) .4356	(6) .000961	(6) .001225	(6) .00000289	(6) 16.016004

M (1) Find the square roots of $\frac{1}{16}$, $11\frac{1}{4}$, $2\frac{1}{4}$, $\frac{1}{4}$, and $18\frac{1}{4}$.

(2) Extract the square roots of $\frac{1}{4}$, $8\frac{1}{4}$, .001, and $32\frac{1}{4}$, to four places of decimals.

(3) What is the length of each side of a square court which contains 43,785.5625 square feet?

(4) What fraction of $\sqrt{2\frac{1}{4}}$ is $\sqrt{.04}$?

N (1) Extract the square root of .892143 of $12\frac{1}{4}$ sq. ft.

(2) Find the length of the side of a square which is equal to the sum of two squares, whose sides are 51 and 68 inches respectively.

(3) What percentage of the square root of .09 is the square of .09?

(4) A society raised among themselves a sum of £178 10s 9d.; each member contributing as many pence as there were members in the society. How many members were there?

O (1) How long will it take a man to walk round a square field whose area is $5\frac{1}{4}$ acres, at the rate of a mile in $10\frac{1}{2}$ minutes?

(2) What fraction of a mile is the side of a square park, containing .694 of a square mile?

(3) A man undertook to walk round a square field containing 13 acres 1,089 square yards in 7 minutes. If his pace was on the average 5 miles an hour, by how much time did he win?

(4) The areas of three squares are in the ratios of 1:9:16; the area of the second is 944,784 square inches; find the length of a side of the others in yards?

CUBE ROOT.

Ex. III.

Extract the Cube Root of,—

A	B	C	D	E	F
(1) 125	(1) 6,859	(1) 157,464	(1) 79,507	(1) 531,441	(1) 857,375
(2) 729	(2) 9,261	(2) 148,877	(2) 24,389	(2) 571,787	(2) 1,191,016
(3) 1,321	(3) 15,625	(3) 300,763	(3) 373,248	(3) 614,125	(3) 1,728,000
(4) 2,197	(4) 19,683	(4) 226,981	(4) 274,625	(4) 658,503	(4) 9,528,128
(5) 3,375	(5) 29,791	(5) 42,875	(5) 438,976	(5) 704,969	(5) 28,094,464
(6) 4,913	(6) 32,764	(6) 21,952	(6) 50,653	(6) 804,357	(6) 140,608,000

G	H	I	J
(1) .000027	(1) 1.321	(1) .068921	(1) .250047
(2) .000125	(2) 1.728	(2) 91.125	(2) .421875
(3) .064	(3) 2.744	(3) .140608	(3) .074088
(4) .343	(4) 2.197	(4) 15.625	(4) .571787
(5) .000343	(5) 9.261	(5) 39.304	(5) .753571
(6) .00001321	(6) 29.791	(6) 185.193	(6) .857375

K	L
(1) .000000001	(1) 8,120.601
(2) .000000121	(2) 27.543608
(3) .000001728	(3) 69.426531
(4) 1.030301	(4) 28,372.625
(5) 1.404928	(5) 134,217.728
(6) 1,367.631	(6) 223,648.543

- M (1) Find the cube roots of $\frac{1}{8}$, $\frac{1}{27}$, $37\frac{1}{27}$, and $.57870\bar{3}$.
- (2) Extract the cube roots of $\frac{1}{8}$, $4\frac{1}{8}$, .00006, and 17.45 to three places of decimals.
- (3) Find the edge of a cubical box which contains 197,137.368 cubic inches.
- (4) What is the smallest alteration of the number 831,600, which, either by addition or subtraction, will make it a perfect cube?
- N (1) Find the average of the following quantities, and state it as a decimal:— $\sqrt{2\frac{1}{4}}$, $[(\frac{1}{2} \text{ of } 3\frac{1}{2}) + (\frac{1}{3} \text{ of } \frac{1}{3})]^2$, $\sqrt[3]{.343}$, 1.001, and 1.
- (2) A cubical space containing 941,192 cubic inches is exactly filled by 64 cubical boxes; find the length of a side of each box.
- (3) The length of a side of a cubical cistern is 7 feet; find the length of a side of another cubical cistern, which will contain twice as much.
- (4) A cubical box contains 91,125 cubic inches; what is the cost of painting its surface at 2d. per square foot.

Hughes's Educational Course.

THE ANSWERS

OF

HUGHES'S

Practical Course of Arithmetic.

LONDON :

JOSEPH HUGHES, PILGRIM STREET, LUDGATE HILL, E.C.

ANSWERS.

SIMPLE ADDITION.

Ex. 1 (Page 1).

A.	B.	C.	D.	E.	F.	G.	H.
(1) 8	(1) 16	(1) 22	(1) 24	(1) 18	(1) 25	(1) 27	(1) 20
(2) 10	(2) 19	(2) 24	(2) 24	(2) 22	(2) 28	(2) 25	(2) 21
(3) 11	(3) 19	(3) 26	(3) 32	(3) 24	(3) 29	(3) 35	(3) 25
(4) 12	(4) 18	(4) 24	(4) 30	(4) 27	(4) 35	(4) 45	(4) 29
(5) 13	(5) 21	(5) 29	(5) 31	(5) 30	(5) 38	(5) 45	(5) 33
(6) 14	(6) 21	(6) 29	(6) 32	(6) 29	(6) 33	(6) 39	(6) 38

I.	J.	K.	L.
(1) 163	(1) 243	(1) 189	(1) 329
(2) 150	(2) 361	(2) 220	(2) 411
(3) 220	(3) 291	(3) 226	(3) 440
(4) 221	(4) 320	(4) 255	(4) 455
(5) 225	(5) 308	(5) 253	(5) 371

Ex. 2 (Page 2).

A.	B.	C.	D.	E.
(1) 2,588	(1) 2,440	(1) 27,937	(1) 12,073	(1) 14,942
(2) 3,070	(2) 2,032	(2) 33,738	(2) 10,554	(2) 16,096
(3) 2,059	(3) 1,761	(3) 35,251	(3) 21,248	(3) 23,891
(4) 2,084	(4) 1,268	(4) 127	(4) 21,799	(4) 20,208
(5) 3,028	(5) 3,288	(5) 3,807	(5) 14,101	(5) 21,898
(6) 1,873	(6) 2,329	(6) 2,198	(6) 26,341	(6) 38,458
(7) 3,263				
(8) 2,732				

F.	G.
(1) 28,655	(1) 1,532
(2) 27,126	(2) 3,347
(3) 39,366	(3) 13,918
(4) 41,814	(4) 21,253
(5) 36,663	(5) 20,705
(6) 42,419	(6) 24,295

Ex. 3 (Page 3).

A.	B.	C.	D.	E.
(1) 28,009	(1) 31,247	(1) 161,551	(1) 237,741	(1) 243,728
(2) 35,352	(2) 36,706	(2) 149,301	(2) 254,028	(2) 282,862
(3) 33,498	(3) 42,819	(3) 60,817	(3) 337,923	(3) 373,214
(4) 37,859	(4) 15,498	(4) 267,795	(4) 337,384	(4) 288,913
(5) 36,688	(5) 12,805	(5) 197,038	(5) 254,263	(5) 275,203
(6) 45,955	(6) 15,239			

F.	G.	H.	I.	J.
(1) 37,610	(1) 31,950	(1) 210,685	(1) 119,800	(1) 44,448
(2) 162,623	(2) 91,771	(2) 345,589	(2) 54,402	(2) 75,748
(3) 35,126	(3) 40,166	(3) 278,772	(3) 175,249	(3) 133,348
(4) 76,308	(4) 60,307	(4) 263,248	(4) 234,774	(4) 20,782
(5) 39,719	(5) 7,887	(5) 399,566	(5) 109,350	(5) 282,399

K.	L.	M.	N.
(1) 262,390	(1) 155,675	(1) 337,493	(1) 52,266
(2) 266,277	(2) 191,642	(2) 362,957	(2) 229,860
(3) 295,745	(3) 151,857	(3) 422,689	(3) 168,984
(4) 332,585	(4) 182,125	(4) 424,899	(4) 113,066
(5) 296,875	(5) 314,977	(5) 479,887	(5) 143,604

Ex. 4 (Page 6).

A.	B.	C.	D.
(1) 4,224,475	(1) 4,304,963	(1) 4,647,314	(1) 28,879,065
(2) 3,933,881	(2) 4,869,641	(2) 4,650,884	(2) 320,322,893
(3) 4,641,417	(3) 4,607,607	(3) 4,625,600	(3) 770,486,775
(4) 4,989,125	(4) 4,591,847	(4) 4,860,955	(4) 79,393,041,120
(5) 4,668,815	(5) 4,395,910	(5) 4,192,451	

Ex. 5 (Page 7).

A.	B.	C.	D.	E.
(1) 310 (w)	(1) 25,732	(1) 6,547	(1) 475,667	(1) 1,243,048
(2) 9,552	(2) 522 (w)	(2) 117	(2) 60	(2) 25
(3) 10,524	(3) 1,470	(3) 53,455 (w)	(3) 166,740	(3) 69,276,935
(4) 160	(4) 11,920	(4) 167	(4) 2,453	(4) 152

F.	G.	H.
(1) 21,469,453	(1) 293,771,741	(1) 1,236,352,286
(2) 501	(2) 970	(2) 1,898
(3) 2,057,162	(3) 93,127,114	(3) 210
(4) 216	(4) 1,642	(4) 1,000

SIMPLE SUBTRACTION.

Ex. 6 (Page 9).

A.	B.	C.	D.	E.	F.
(1) 1	(1) 2	(1) 103	(1) 453	(1) 3	(1) 202
(2) 3	(2) 23	(2) 332	(2) 505	(2) 20	(2) 133
(3) 3	(3) 31	(3) 350	(3) 110	(3) 40	(3) 420
(4) 1	(4) 30	(4) 133	(4) 401	(4) 8	(4) 3
(5) 6	(5) 10	(5) 433	(5) 116	(5) 41	(5) 621
(6) 4	(6) 23	(6) 600	(6) 50	(6) 11	(6) 280
(7) 2	(7) 5	(7) 101	(7) 100		
(8) 3	(8) 2	(8) 810	(8) 613		
(9) 2	(9) 14				
(10) 2	(10) 30				
(11) 2					
(12) 1					

G.	H.	I.	J.	K.
(1) 372	(1) 451	(1) 50	(1) 7,202	(1) 1,121
(2) 222	(2) 3	(2) 243	(2) 1,002	(2) 301
(3) 6	(3) 400	(3) 143	(3) 901	(3) 3,201
(4) 390	(4) 120	(4) 313	(4) 3,300	(4) 5,000
(5) 152	(5) 301	(5) 2	(5) 5,603	(5) 1,232
(6) 210	(6) 203	(6) 406	(6) 2,017	(6) 2,020

Ex. 7 (Page 10).

A.	B.	C.	D.	E.	F.
(1) 1,422	(1) 1,010	(1) 579	(1) 800	(1) 2,909	(1) 2,578
(2) 962	(2) 606	(2) 2,099	(2) 2,585	(2) 404	(2) 850
(3) 3,934	(3) 1,391	(3) 989	(3) 3,280	(3) 209	(3) 394
(4) 936	(4) 699	(4) 100	(4) 1,757	(4) 1,607	(4) 4,115
(5) 1,006	(5) 2,009	(5) 3,608	(5) 1,509	(5) 1,950	(5) 1,039
(6) 7,097	(6) 2,694	(6) 3,460	(6) 3,556	(6) 4,589	(6) 1,908
(7) 2,308	(7) 1,297	(7) 1,777	(7) 3,984	(7) 16	(7) 2,562
(8) 3,805	(8) 10	(8) 4,808	(8) 1,348	(8) 2,099	(8) 1,999

G.	H.	I.
(1) 1,699	(1) 2,952	(1) 1,109
(2) 1,495	(2) 2,105	(2) 1,010
(3) 6,810	(3) 916	(3) 8,298
(4) 1,701	(4) 980	(4) 1,099
(5) 306	(5) 2,910	(5) 1,104
(6) 930	(6) 4,851	(6) 1,796
(7) 991	(7) 6,591	(7) 999
(8) 3,677	(8) 989	(8) 488

Ex. 8 (Page 11).

A.	B.	C.	D.	E.	F.
(1) 991	(1) 3,005	(1) 410	(1) 4,616	(1) 1,262	(1) 1,078
(2) 6,327	(2) 6,177	(2) 4,704	(2) 103	(2) 5,368	(2) 6,966
(3) 4,369	(3) 4,614	(3) 707	(3) 2,875	(3) 973	(3) 3,287
(4) 469	(4) 1,044	(4) 2,829	(4) 8,098	(4) 609	(4) 6,766

Ex. 9 (Page 12).

A.	B.	C.	D.	E.
(1) 11,735	(1) 7,898	(1) 18,590	(1) 14,898	(1) 10,685
(2) 18,096	(2) 35,127	(2) 907	(2) 10,609	(2) 19,001
(3) 11,475	(3) 22,839	(3) 10,808	(3) 10,205	(3) 3,500
(4) 436	(4) 26,938	(4) 20,816	(4) 9,091	(4) 39,009
(5) 33,408	(5) 4,328	(5) 7,009	(5) 70,094	(5) 10,407
(6) 10,343	(6) 18,739	(6) 10,010	(6) 7,265	(6) 9,010

F.	G.	H.
(1) 7,211	(1) 10,689	(1) 8,896
(2) 18,059	(2) 65,897	(2) 11,024
(3) 30,099	(3) 13,789	(3) 17,905
(4) 24,641	(4) 20,009	(4) 30,378
(5) 39,184	(5) 8,071	(5) 17,298
(6) 70,978	(6) 20,689	(6) 41,932

Ex. 10 (Page 13).

A.	B.	C.	D.
(1) 59,964	(1) 112,807	(1) 30,062	(1) 993,689
(2) 144,601	(2) 94,009	(2) 200,099	(2) 2,859,909
(3) 470,509	(3) 69,906	(3) 90,489	(3) 1,002,997
(4) 9,900	(4) 458,508	(4) 230,085	(4) 4,500,515
(5) 159,309	(5) 210,095	(5) 600,900	(5) 1,513,699
(6) 40,707	(6) 10,400	(6) 170,689	(6) 4,569,665

E.	F.	G.
(1) 1,000,419	(1) 27,909,498	(1) 19,903,091
(2) 1,140,710	(2) 163,161,134	(2) 1,090,792
(3) 23,840,609	(3) 404,174,095	(3) 698,040,920
(4) 9,129,442	(4) 259,910,080	(4) 4,228,908,880
(5) 1,169,415	(5) 4,230,399,880	(5) 96,106,639,364
(6) 990,099	(6) 593,684,253	(6) 1,100,689,099

Ex. 11 (*Page 14*).

A.	B.	C.	D.
(1) 45	(1) 364	(1) 358	(1) 519
(2) 983	(2) 1,090 (<i>w</i>)	(2) 2,748	(2) 19,884 (<i>w</i>)
(3) 1,998	(3) 1,007	(3) 1,005 (<i>w</i>)	(3) 11
(4) 101	(4) 1,001	(4) 10,007	(4) 76

**EXAMINATIONS IN SIMPLE ADDITION AND
SUBTRACTION.**

Ex. 12 (*Page 15*).

A.	B.	C.	D.	E.
(1) 182	(1) 223	(1) 14	(1) 2,002 (<i>w</i>)	(1) 1,886
(2) 600	(2) 7,000 (<i>w</i>)	(2) 133	(2) 13	(2) 81
(3) 3,642	(3) 280	(3) 307 (<i>w</i>)	(3) 26	(3) 708,778
(4) 116	(4) 100	(4) 199	(4) 160	(4) 150

F.	G.	H.
(1) 400,750,321 (<i>w</i>)	(1) 1,284 ; 216	(1) 40
(2) 825	(2) 2,274,091 (<i>w</i>)	(2) 324,937,594
(3) 1,384	(3) 70	(3) 379,704
(4) 200	(4) 94,760,000	(4) 22 less

ANSWERS.

SIMPLE MULTIPLICATION.

Ex. 18 (Page 17).

A.	B.	C.	D.	E.	F.	G.	H.
(1) 42	(1) 90	(1) 69	(1) 192	(1) 172	(1) 170	(1) 312	(1) 245
(2) 46	(2) 106	(2) 90	(2) 168	(2) 216	(2) 210	(2) 210	(2) 476
(3) 64	(3) 52	(3) 129	(3) 225	(3) 288	(3) 335	(3) 504	(3) 518
(4) 80	(4) 110	(4) 75	(4) 234	(4) 272	(4) 415	(4) 414	(4) 273
(5) 66	(5) 126	(5) 162	(5) 249	(5) 236	(5) 475	(5) 462	(5) 609
(6) 86	(6) 112	(6) 108	(6) 291	(6) 148	(6) 445	(6) 558	(6) 665

I.—a.	b.	c.	d.	e.
(1) 46,112	(1) 61,174	(1) 151,800	(1) 174,920	(1) 47,708
(2) 69,168	(2) 91,761	(2) 227,700	(2) 262,380	(2) 71,562
(3) 92,224	(3) 122,348	(3) 303,600	(3) 349,840	(3) 95,416
(4) 115,280	(4) 152,935	(4) 379,500	(4) 437,300	(4) 119,270
(5) 138,336	(5) 183,522	(5) 455,400	(5) 524,760	(5) 143,124
(6) 161,392	(6) 214,109	(6) 531,300	(6) 612,220	(6) 166,978

f.	g.	h.	i.	j.
(1) 125,018	(1) 116,540	(1) 71,892	(1) 85,618	(1) 65,350
(2) 187,527	(2) 174,810	(2) 107,838	(2) 128,427	(2) 98,025
(3) 250,036	(3) 233,080	(3) 143,784	(3) 171,236	(3) 130,700
(4) 312,545	(4) 291,350	(4) 179,730	(4) 214,045	(4) 163,375
(5) 375,054	(5) 349,620	(5) 215,676	(5) 256,854	(5) 196,050
(6) 437,563	(6) 407,890	(6) 251,622	(6) 299,663	(6) 228,725

k.	l.	m.	n.	o.
(1) 50,876	(1) 125,154	(1) 58,774	(1) 117,618	(1) 153,174
(2) 76,314	(2) 187,731	(2) 88,161	(2) 176,427	(2) 229,761
(3) 101,752	(3) 250,308	(3) 117,548	(3) 235,236	(3) 306,348
(4) 127,190	(4) 312,885	(4) 146,935	(4) 294,045	(4) 382,935
(5) 152,628	(5) 375,462	(5) 176,322	(5) 352,854	(5) 459,522
(6) 178,066	(6) 438,039	(6) 205,709	(6) 411,663	(6) 536,109

p.	q.	r.	s.	t.
(1) 186,550	(1) 94,772	(1) 59,158	(1) 115,734	(1) 179,476
(2) 279,825	(2) 142,158	(2) 88,737	(2) 173,601	(2) 269,214
(3) 373,100	(3) 189,544	(3) 118,316	(3) 231,468	(3) 358,952
(4) 466,375	(4) 236,930	(4) 147,895	(4) 289,335	(4) 448,690
(5) 559,650	(5) 284,316	(5) 177,474	(5) 347,202	(5) 538,428
(6) 652,925	(6) 331,702	(6) 207,053	(6) 405,069	(6) 628,166

u.	v.	w.	x.	J.
(1) 87,974	(1) 135,758	(1) 106,572	(1) 197,794	(1) 274,144
(2) 131,961	(2) 203,637	(2) 159,858	(2) 296,691	(2) 533,781
(3) 175,948	(3) 271,516	(3) 213,144	(3) 395,588	(3) 765,380
(4) 219,935	(4) 339,395	(4) 266,430	(4) 494,485	(4) 966,515
(5) 263,922	(5) 407,274	(5) 319,716	(5) 593,382	(5) 471,444
(6) 307,909	(6) 475,153	(6) 373,002	(6) 692,279	(6) 348,885

K.	L.—a.	b.	c.	d.
(1) 735,490	(1) 50,463	(1) 40,719	(1) 63,049	(1) 47,495
(2) 1,048,752	(2) 57,672	(2) 46,536	(2) 72,056	(2) 54,280
(3) 530,708	(3) 64,881	(3) 52,353	(3) 81,063	(3) 61,065
(4) 710,160	(4) 72,090	(4) 58,170	(4) 90,070	(4) 67,850
(5) 839,619	(5) 79,299	(5) 63,987	(5) 99,077	(5) 74,635
(6) 790,152	(6) 86,508	(6) 69,804	(6) 108,084	(6) 81,420

e.	f.
(1) 62,580	(1) 17,633
(2) 71,520	(2) 20,152
(3) 80,460	(3) 22,671
(4) 89,400	(4) 25,190
(5) 98,340	(5) 27,709
(6) 107,280	(6) 30,228

Ex. 14 (Page 18).

A.	B.	C.	D.	E.
(1) 33,684	(1) 130,248	(1) 155,925	(1) 390,375	(1) 545,400
(2) 56,310	(2) 117,000	(2) 188,300	(2) 195,020	(2) 410,048
(3) 40,480	(3) 101,655	(3) 275,724	(3) 138,450	(3) 463,056
(4) 130,770	(4) 198,716	(4) 335,840	(4) 209,088	(4) 402,150
(5) 92,380	(5) 189,720	(5) 311,010	(5) 367,895	(5) 204,264
(6) 113,106	(6) 215,136	(6) 260,788	(6) 519,120	(6) 325,440

F.	G.	H.	I.
(1) 1,120,322	(1) 3,170,842	(1) 6,915,502	(1) 1,923,331
(2) 4,175,592	(2) 3,846,024	(2) 5,356,765	(2) 2,274,064
(3) 2,484,440	(3) 6,830,272	(3) 6,768,630	(3) 4,763,986
(4) 5,349,412	(4) 3,969,815	(4) 2,727,202	(4) 3,902,175
(5) 2,503,596	(5) 3,266,550	(5) 7,122,490	(5) 3,430,754
(6) 6,560,510	(6) 2,556,669	(6) 8,453,042	(6) 5,544,580

J.	K.	L.	M.
(1) 3,918,465	(1) 2,572,923	(1) 3,259,592	(1) 5,700,593
(2) 244,320	(2) 518,616	(2) 5,948,320	(2) 4,786,384
(3) 4,751,351	(3) 5,220,360	(3) 5,208,052	(3) 7,091,435
(4) 3,844,596	(4) 1,035,300	(4) 8,633,801	(4) 7,505,751
(5) 3,529,503	(5) 382,046	(5) 7,528,136	(5) 7,228,089
(6) 5,527,800	(6) 674,427	(6) 7,118,820	(6) 9,691,906

Ex. 15 (Pages 20, 21).

A.		B.		C.		D.	
(1)	348,951	(1)	1,292,025	(1)	3,690,700	(1)	7,635,250
(2)	455,000	(2)	1,186,800	(2)	2,243,500	(2)	1,563,360
(3)	952,680	(3)	2,720,256	(3)	3,651,648	(3)	2,817,395
(4)	1,717,625	(4)	2,756,880	(4)	1,869,246	(4)	3,852,630
(5)	1,440,920	(5)	2,383,876	(5)	2,953,782	(5)	1,898,688
(6)	2,633,200	(6)	5,267,328	(6)	3,712,068	(6)	6,465,343
E.		F.		G.		H.	
(1)	2,089,000	(1)	25,081,868	(1)	28,613,016	(1)	18,531,582
(2)	2,527,895	(2)	14,397,696	(2)	34,838,808	(2)	32,119,820
(3)	1,828,200	(3)	21,231,740	(3)	78,791,130	(3)	17,649,408
(4)	2,888,504	(4)	15,698,412	(4)	55,160,000	(4)	84,265,200
(5)	4,765,488	(5)	41,257,623	(5)	11,399,731	(5)	68,878,122
(6)	3,497,580	(6)	53,030,640	(6)	89,799,242	(6)	24,831,000
I.		J.		K.		L.	
(1)	19,377,090	(1)	11,738,062	(1)	13,387,940	(1)	30,363,900
(2)	81,857,670	(2)	26,596,538	(2)	22,972,140	(2)	4,035,630
(3)	20,980,800	(3)	61,292,270	(3)	37,886,520	(3)	34,640,800
(4)	20,899,296	(4)	3,826,680	(4)	5,929,770	(4)	44,978,880
(5)	8,550,516						
(6)	30,097,905						
M.		N.					
(1)	51,028,208	(1)	202,609,363				
(2)	1,021,224	(2)	5,239,836				
(3)	22,262,790	(3)	31,093,632				
(4)	8,769,762	(4)	74,902,560				

Ex. 16 (Pages 22, 23).

A.		B.		C.		D.	
(1)	52,090,865	(1)	157,360,914	(1)	439,776,000	(1)	589,238,200
(2)	292,771,455	(2)	245,197,663	(2)	449,818,760	(2)	65,798,355
(3)	84,252,584	(3)	194,039,968	(3)	525,262,254	(3)	257,657,600
(4)	262,175,000	(4)	448,175,916	(4)	312,290,000	(4)	310,076,465
(5)	469,246,050	(5)	206,967,000	(5)	180,557,740	(5)	275,496,255
(6)	71,086,600	(6)	238,571,382	(6)	424,789,008	(6)	392,000,000
E.		F.		G.		H.	
(1)	243,841,248	(1)	282,524,706	(1)	390,059,208	(1)	388,967,300
(2)	342,303,885	(2)	382,640,832	(2)	435,121,470	(2)	295,971,690
(3)	583,971,950	(3)	388,079,142	(3)	477,544,480	(3)	149,564,980
(4)	217,322,391	(4)	148,393,480	(4)	341,028,926	(4)	628,530,350
(5)	302,565,000	(5)	210,314,845	(5)	126,189,230	(5)	194,920,183
(6)	206,305,939	(6)	471,245,092	(6)	866,082,490	(6)	431,635,882

ANSWERS.

195

I.	J.	K.	L.
(1) 141,192,100	(1) 52,373,307	(1) 402,983,000	(1) 560,787,670
(2) 214,444,800	(2) 22,212,448	(2) 16,459,249	(2) 21,582,100
(3) 450,800,000	(3) 84,035,000	(3) 126,078,750	(3) 180,299,110
(4) 448,616,070	(4) 693,612,120	(4) 208,382,830	(4) 261,000,000

M. (1) 89,276,040 (2) 82,264,900 (3) 576,904,350 (4) 468,919,752

Ex. 17 (Page 24).

A.	B.	C.
(1) 12,907,036,868	(1) 17,715,092,890	(1) 91,132,497
(2) 46,293,655,695	(2) 31,865,433,600	(2) 1,280,002,560,000
(3) 38,542,634,730	(3) 19,538,355,000	(3) 4,306,227,618
(4) 16,745,340,016	(4) 3,237,968,460	(4) 50,231,414,156
(5) 14,216,338,422	(5) 41,517,123,840	(5) 457,530,599,592
(6) 5,008,609,920	(6) 54,584,447,391	(6) 999,999,333

D.	E.
(1) 3,269,691,887	(1) 318,155,065,609,800
(2) 606,000,134,241	(2) 224,444,061,636,540
(3) 541,804,401,201,456	(3) 110,468,000,934,935
(4) 4,555,378,620	(4) 671,404,867,128,902
(5) 3,152,612,974,035	(5) 87,110,194,431,308
(6) 20,427,191,092	(6) 240,066,385,057,917

F.
(1) 46,370,811,993,854,882
(2) 24,406,706,563,842,240
(3) 12,733,215,445,718,775
(4) 67,959,281,605,154,940
(5) 29,223,061,671,142,451
(6) 98,675,107,848,399,348

EXAMINATIONS IN SIMPLE MULTIPLICATION.

Ex. 18 (Page 25).

A.	B.	C.
(1) 97,533,579	(1) 27,999,972	(1) 190,546,200
(2) 59,542,000	(2) 160	(2) 19,788
(3) 102,030,201 (w)	(3) 1,016,412,000	(3) 411,018,986,100
(4) 1,992,648	(4) 4,358,993,694	(4) 10,196,326

D.		E.		F.	
(1)	3,269,691,887	(1)	360	(1)	648,513,743,869
(2)	87,976,242	(2)	554,461,535,655	(2)	1,024
(3)	1,450,848,100	(3)	5,773,139,600	(3)	7,330,200
(4)	12,040	(4)	24 hours	(4)	6,036,486
G.		H.		I.	
(1)	4,526,386,860	(1)	959	(1)	450,915,450,915
(2)	7,386,771,721,680	(2)	725,233,500	(2)	9,276,119,190
(3)	4,020	(3)	838,102,050	(3)	51,124,933,020
(4)	124,738,000	(4)	36,865,365	(4)	137,970
J. (1) 156,004,855 (2) 699,932,361 (3) 964,070 (4) 230,400					

SIMPLE SHORT DIVISION.

Ex. 19 (Pages 27, 28).

A.		B.		C.		D.		E.	
(1)	1,231	(1)	1,654+1	(1)	2,286+1	(1)	4,246	(1)	2,013
(2)	4,032	(2)	2,637	(2)	504+1	(2)	551+1	(2)	1,020
(3)	3,115	(3)	2,466	(3)	1,939+1	(3)	3,992	(3)	2,303
(4)	1,524	(4)	4,508	(4)	685	(4)	4,000+1	(4)	1,435
(5)	2,605	(5)	3,678	(5)	4,769+1	(5)	4,857+1	(5)	2,614
(6)	3,617	(6)	2,965	(6)	3,500	(6)	1,928+1	(6)	1,356
F.		G.		H.		I.		J.	
(1)	345+2	(1)	2,973+1	(1)	1,709+2	(1)	1,203	(1)	1,768+1
(2)	2,636	(2)	1,669+2	(2)	898+1	(2)	2,034	(2)	1,594+2
(3)	2,673	(3)	2,300	(3)	1,237+2	(3)	508	(3)	967+2
(4)	1,735	(4)	2,452+2	(4)	2,965	(4)	1,256+3	(4)	263+3
(5)	3,094+2	(5)	902+1	(5)	3,079+1	(5)	1,558	(5)	974+3
(6)	697	(6)	2,686+1	(6)	1,893+2	(6)	759	(6)	1,997+1
K.		L.		M.—a.		b.			
(1)	1,041+3	(1)	357+1	(1)	1,025	(1)	2,892		
(2)	1,207	(2)	1,944	(2)	683+1	(2)	1,928		
(3)	1,643+2	(3)	1,487+3	(3)	512+2	(3)	1,446		
(4)	1,906	(4)	1,601+2	(4)	410	(4)	1,156+4		
(5)	1,477+1	(5)	1,996+3						
(6)	485+4	(6)	1,019+4						
c.		d.		e.		f.			
(1)	3,109+1	(1)	3,974	(1)	2,153+1	(1)	1,947+1		
(2)	2,073	(2)	2,649+1	(2)	1,435+2	(2)	1,298+1		
(3)	1,554+3	(3)	1,987	(3)	1,076+3	(3)	973+3		
(4)	1,248+4	(4)	1,589+3	(4)	861+2	(4)	779		

<i>g.</i>	<i>h.</i>	<i>N.</i>	<i>O.</i>	<i>P.</i>
(1) 855	(1) 4,476+1	(1) 1,954	(1) 4,123	(1) 16,214+3
(2) 570	(2) 2,984+1	(2) 1,419	(2) 12,140	(2) 10,904+4
(3) 427+2	(3) 2,238+1	(3) 2,020	(3) 14,174	(3) 12,282+3
(4) 342	(4) 1,790+3	(4) 756+4	(4) 2,568	(4) 4,793+1
		(5) 1,774+2	(5) 5,004+4	(5) 6,755
		(6) 1,738	(6) 15,622	(6) 8,982+2

<i>Q.</i>	<i>R.</i>	<i>S.</i>	<i>T.</i>
(1) 11,321+1	(1) 11,460	(1) 11,323	(1) 3,271+2
(2) 12,150	(2) 5,002+4	(2) 10,063+3	(2) 5,086+5
(3) 13,441	(3) 5,832+3	(3) 1,525	(3) 4,653+6
(4) 10,002+5	(4) 7,519+5	(4) 2,545+5	(4) 10,098+7
(5) 1,546+4	(5) 9,626+3	(5) 4,636	(5) 6,507+4
(6) 3,344+2	(6) 6,436+6		

<i>U.</i>	<i>V.</i>	<i>W.—a.</i>	<i>b.</i>
(1) 10,304	(1) 4,045+2	(1) 11,716+2	(1) 7,293+1
(2) 1,267+3	(2) 5,254	(2) 10,042+4	(2) 6,251+2
(3) 1,451+1	(3) 3,781	(3) 8,787+2	(3) 5,469+7
(4) 2,317	(4) 5,977+7	(4) 7,810+8	(4) 4,862+1
(5) 2,558+4	(5) 7,078+6		

<i>c.</i>	<i>d.</i>	<i>e.</i>	<i>f.</i>
(1) 6,440	(1) 4,852	(1) 13,450	(1) 9,977+5
(2) 5,520	(2) 4,158+6	(2) 11,528+4	(2) 8,552+3
(3) 4,830	(3) 3,639	(3) 10,087+4	(3) 7,483+3
(4) 4,293+3	(4) 3,234+6	(4) 8,966+6	(4) 6,651+8

<i>g.</i>	<i>h.</i>
(1) 11,011	(1) 6,753+5
(2) 9,438	(2) 5,789
(3) 8,258+2	(3) 5,065+3
(4) 7,340+6	(4) 4,502+5

Ex. 20 (Page 29).

<i>A.</i>	<i>B.</i>	<i>C.</i>	<i>D.</i>
(1) 3,084+2	(1) 2,508+4	(1) 1,258	(1) 5,723+8
(2) 3,397+8	(2) 7,320+5	(2) 3,004+7	(2) 4,389+5
(3) 7,448	(3) 8,749+1	(3) 8,234+5	(3) 7,005+1
(4) 1,745+4	(4) 5,678	(4) 2,753+8	(4) 8,942+9
(5) 2,708+8	(5) 3,090+7	(5) 4,207+6	(5) 6,538
(6) 5,636+1	(6) 9,257+8	(6) 1,009	(6) 9,287+8
<i>E.</i>	<i>F.</i>	<i>G.</i>	<i>H.</i>
(1) 2,133	(1) 3,450+8	(1) 1,134	(1) 4,797+7
(2) 2,732+6	(2) 6,095+6	(2) 2,041+5	(2) 5,328+10
(3) 4,107+3	(3) 2,819+5	(3) 3,615+7	(3) 3,894+6
(4) 3,455+3	(4) 4,879	(4) 6,274+10	(4) 5,786
(5) 4,402+7	(5) 7,208+10	(5) 5,380+6	(5) 8,053+11

I.		J.—a.		b.		c.	
(1) 5,306 + 6	(1) 1,376,945	(1) 2,695,088 + 1	(1) 4,900,026 + 1				
(2) 6,785 + 4	(2) 917,963 + 1	(2) 1,796,725 + 2	(2) 3,266,684 + 1				
(3) 8,359	(3) 688,472 + 2	(3) 1,347,544 + 1	(3) 2,450,013 + 1				
(4) 3,870 + 9	(4) 550,778	(4) 1,078,035 + 2	(4) 1,960,010 + 3				
(5) 5,638 + 7	(5) 458,981 + 4	(5) 898,362 + 5	(5) 1,633,342 + 1				
(6) 6,773 + 10	(6) 393,412 + 6	(6) 770,025 + 2	(6) 1,400,007 + 4				
	(7) 344,236 + 2	(7) 673,772 + 1	(7) 1,225,006 + 5				
	(8) 305,987 + 7	(8) 598,908 + 5	(8) 1,088,894 + 7				
	(9) 275,389	(9) 539,017 + 7	(9) 980,005 + 3				
	(10) 250,353 + 7	(10) 490,016 + 1	(10) 890,913 + 10				
	(11) 229,490 + 10	(11) 449,181 + 5	(11) 816,671 + 1				
d.		e.		f.			
(1) 2,364,300	(1) 2,504,368	(1) 3,641,774 + 1					
(2) 1,576,200	(2) 1,669,578 + 2	(2) 2,427,849 + 2					
(3) 1,182,150	(3) 1,252,184	(3) 1,820,887 + 1					
(4) 945,720	(4) 1,001,747 + 1	(4) 1,456,709 + 4					
(5) 788,100	(5) 834,789 + 2	(5) 1,213,924 + 5					
(6) 675,514 + 2	(6) 715,533 + 5	(6) 1,040,507					
(7) 591,075	(7) 626,092	(7) 910,443 + 5					
(8) 525,400	(8) 556,526 + 2	(8) 809,283 + 2					
(9) 472,860	(9) 500,873 + 6	(9) 728,354 + 9					
(10) 429,872 + 8	(10) 455,339 + 7	(10) 662,140 + 9					
(11) 394,050	(11) 417,394 + 8	(11) 606,962 + 5					
g.		h.		i.			
(1) 617,283 + 1	(1) 1,793,627	(1) 24,117,336					
(2) 411,522 + 1	(2) 1,195,751 + 1	(2) 16,078,224					
(3) 308,641 + 3	(3) 896,813 + 2	(3) 12,058,668					
(4) 246,913 + 2	(4) 717,450 + 4	(4) 9,646,934 + 2					
(5) 205,761 + 1	(5) 597,875 + 4	(5) 8,039,112					
(6) 176,366 + 5	(6) 512,464 + 6	(6) 6,890,667 + 3					
(7) 154,320 + 7	(7) 448,406 + 6	(7) 6,029,334					
(8) 137,174 + 1	(8) 398,583 + 7	(8) 5,359,408					
(9) 123,456 + 7	(9) 358,725 + 4	(9) 4,823,467 + 2					
(10) 112,233 + 4	(10) 326,114	(10) 4,384,970 + 2					
(11) 102,880 + 7	(11) 298,937 + 10	(11) 4,019,556					
j.		k.		l.			
(1) 12,693,600	(1) 23,118,997 + 1	(1) 28,827,106 + 1					
(2) 8,462,400	(2) 15,412,665	(2) 19,218,071					
(3) 6,346,800	(3) 11,559,498 + 3	(3) 14,413,553 + 1					
(4) 5,077,440	(4) 9,247,599	(4) 11,530,842 + 3					
(5) 4,231,200	(5) 7,706,332 + 3	(5) 9,609,035 + 3					
(6) 3,626,742 + 6	(6) 6,605,427 + 6	(6) 8,236,316 + 1					
(7) 3,173,400	(7) 5,779,749 + 3	(7) 7,206,776 + 5					
(8) 2,820,800	(8) 5,137,555	(8) 6,406,023 + 6					
(9) 2,538,720	(9) 4,623,799 + 5	(9) 5,765,421 + 3					
(10) 2,307,927 + 3	(10) 4,203,454 + 1	(10) 5,241,292 + 1					
(11) 2,115,600	(11) 3,853,166 + 3	(11) 4,804,517 + 9					

ANSWERS.

199.

<i>m.</i>			<i>n.</i>			<i>o.</i>		
(1)	19,463,029		(1)	36,857,411 + 1		(1)	13,120,725	
(2)	12,975,352 + 2		(2)	24,571,607 + 2		(2)	8,751,156 + 2	
(3)	9,731,514 + 2		(3)	18,428,705 + 3		(3)	6,563,367 + 2	
(4)	7,785,211 + 3		(4)	14,742,964 + 3		(4)	5,250,694	
(5)	6,487,676 + 2		(5)	12,285,803 + 5		(5)	4,375,578 + 3	
(6)	5,560,865 + 3		(6)	10,530,689		(6)	3,750,495 + 5	
(7)	4,865,757 + 2		(7)	9,214,352 + 7		(7)	3,281,683 + 6	
(8)	4,325,117 + 5		(8)	8,190,535 + 8		(8)	2,917,052 + 2	
(9)	3,892,605 + 8		(9)	7,371,482 + 3		(9)	2,625,347	
(10)	3,538,732 + 6		(10)	6,701,347 + 6		(10)	2,386,679 + 1	
(11)	3,243,838 + 2		(11)	6,142,901 + 11		(11)	2,187,789 + 2	
<i>p.</i>			<i>q.</i>			<i>r.</i>		
(1)	8,650,400 + 1		(1)	182,760,882		(1)	86,543,214 + 1	
(2)	5,766,933 + 2		(2)	121,840,588		(2)	57,695,476 + 1	
(3)	4,325,200 + 1		(3)	91,880,441		(3)	43,271,607 + 1	
(4)	3,460,160 + 1		(4)	73,104,352 + 4		(4)	34,617,285 + 4	
(5)	2,883,466 + 5		(5)	60,920,294		(5)	28,847,738 + 1	
(6)	2,471,543		(6)	52,217,394 + 6		(6)	24,726,632 + 5	
(7)	2,162,600 + 1		(7)	45,690,220 + 4		(7)	21,635,803 + 5	
(8)	1,922,311 + 2		(8)	40,613,529 + 3		(8)	19,231,825 + 4	
(9)	1,730,080 + 1		(9)	36,552,176 + 4		(9)	17,308,642 + 9	
(10)	1,572,800 + 1		(10)	33,229,251 + 3		(10)	15,735,129 + 10	
(11)	1,441,733 + 5		(11)	30,460,147		(11)	14,423,869 + 1	
<i>s.</i>			<i>t.</i>			<i>u.</i>		
(1)	192,139,694		(1)	274,050,336		(1)	219,643,768	
(2)	128,093,129 + 1		(2)	182,700,224		(2)	146,429,178 + 2	
(3)	96,069,847		(3)	137,025,168		(3)	109,821,884	
(4)	76,855,877 + 3		(4)	109,620,134 + 2		(4)	87,857,507 + 1	
(5)	64,046,564 + 4		(5)	91,350,112		(5)	73,214,589 + 2	
(6)	54,897,055 + 3		(6)	78,300,096		(6)	62,755,362 + 2	
(7)	48,034,923 + 4		(7)	68,512,584		(7)	54,910,942	
(8)	42,697,709 + 7		(8)	60,900,074 + 6		(8)	48,809,726 + 2	
(9)	38,427,938 + 8		(9)	54,810,067 + 2		(9)	43,928,753 + 6	
(10)	34,934,489 + 9		(10)	49,827,333 + 9		(10)	39,935,230 + 6	
(11)	32,023,282 + 4		(11)	45,675,056		(11)	36,607,294 + 8	
<i>v.</i>			<i>w.</i>			<i>x.</i>		
(1)	463,671,061 + 1		(1)	285,588,448 + 1		(1)	249,329,617 + 1	
(2)	309,114,041		(2)	190,392,299		(2)	166,219,745	
(3)	231,835,530 + 3		(3)	142,794,224 + 1		(3)	124,664,808 + 3	
(4)	185,468,424 + 3		(4)	114,235,379 + 2		(4)	99,731,847	
(5)	154,557,020 + 3		(5)	95,196,149 + 3		(5)	83,109,872 + 3	
(6)	132,477,446 + 1		(6)	81,596,699 + 4		(6)	71,237,033 + 4	
(7)	115,917,765 + 3		(7)	71,397,112 + 1		(7)	62,332,404 + 3	
(8)	103,038,013 + 6		(8)	63,464,099 + 6		(8)	55,406,581 + 6	
(9)	92,734,212 + 3		(9)	57,117,689 + 7		(9)	49,865,923 + 5	
(10)	84,303,829 + 4		(10)	51,925,172 + 5		(10)	45,332,657 + 8	
(11)	77,278,510 + 3		(11)	47,598,074 + 9		(11)	41,554,936 + 3	

Ex. 21 (Page 30).

A.		B.		C.		D.	
(1)	3,877 + 2	(1)	2,214 + 1	(1)	2,277 + 3	(1)	1,072 + 23
(2)	1,959 + 12	(2)	1,625 + 4	(2)	1,613 + 20	(2)	1,519 + 26
(3)	881 + 10	(3)	2,633 + 8	(3)	2,303	(3)	664 + 13
(4)	4,847 + 7	(4)	983 + 6	(4)	1,187 + 21	(4)	500 + 16
(5)	1,530 + 8	(5)	1,808 + 14	(5)	1,935 + 28	(5)	244 + 25
(6)	3,180 + 5	(6)	617 + 5	(6)	1,554 + 16	(6)	1,106 + 44

E.		F.		G.		H.	
(1)	8,309 + 4	(1)	19,898 + 39	(1)	744 + 88	(1)	708 + 14
(2)	6,450 + 26	(2)	41,669 + 33	(2)	729 + 27	(2)	694 + 75
(3)	1,638 + 11	(3)	73,303 + 30	(3)	285	(3)	5,170
(4)	3,665 + 7	(4)	33,399 + 76	(4)	101 + 15	(4)	4,801 + 9
(5)	12,244 + 49	(5)	14,660 + 18	(5)	792 + 84	(5)	65,294 + 10
(6)	10,291 + 15	(6)	83,893 + 23	(6)	507 + 9	(6)	41,667 + 4

I.	
(1)	14,815
(2)	79,841 + 21
(3)	97,882 + 33
(4)	100,000 + 17
(5)	18,703 + 49
(6)	232,142 + 27

EXAMINATIONS IN SIMPLE SHORT DIVISION.**Ex. 22** (Pages 31, 32).

A.		B.		C.		D.		E.	
(1)	267,538 + 7	(1)	111,112	(1)	9,789	(1)	375,000	(1)	7,498
(2)	25	(2)	208	(2)	89,521	(2)	8,572,609	(2)	500
(3)	579	(3)	1,137,573	(3)	10	(3)	84	(3)	900
(4)	5	(4)	825	(4)	15	(4)	25	(4)	6,408 (w)

F.		G.		H.		I.	
(1)	63	(1)	3,001,715	(1)	43,410,869 + 2	(1)	166,666 + 16
(2)	472,408 + 24	(2)	1,835	(2)	2,500	(2)	44
(3)	30	(3)	21,757	(3)	5	(3)	29,678 + 6
(4)	252	(4)	53	(4)	27	(4)	89

J.		K.		L.	
(1)	715	(1)	809,789	(1)	1,200 + 1
(2)	500,000	(2)	7,358	(2)	134,488
(3)	100 (w)	(3)	111	(3)	167
(4)	155	(4)	137	(4)	50

ANSWERS.

SIMPLE LONG DIVISION.

Ex. 23 (Pages 83, 84).

A.	B.	C.	D.	E.
(1) 121	(1) 342+24	(1) 305+42	(1) 376	(1) 961+39
(2) 212	(2) 253	(2) 460+38	(2) 528+43	(2) 386+21
(3) 123	(3) 345+28	(3) 537+60	(3) 487+55	(3) 163+77
(4) 231+39	(4) 1,439+4	(4) 670+77	(4) 638+67	(4) 1,894+22
(5) 143	(5) 536+36	(5) 647+39	(5) 570	(5) 669+16
(6) 134	(6) 465+57	(6) 580+50	(6) 708+33	(6) 1,323+4
F.	G.	H.	I.	
(1) 463+87	(1) 1,394+44	(1) 513+22	(1) 10,816+32	
(2) 474+21	(2) 277+55	(2) 1,740+10	(2) 5,490+45	
(3) 841+83	(3) 638+43	(3) 564+24	(3) 6,773+4	
(4) 728+11	(4) 176+2	(4) 810+49	(4) 2,619+7	
(5) 948+20	(5) 449+46	(5) 531+1	(5) 10,360+10	
(6) 586+17	(6) 987	(6) 1,574+22	(6) 16,968+20	
J.	K.	L.	M.—a.	
(1) 2,635+20	(1) 3,857+15	(1) 4,492+26	(1) 17,074+16	
(2) 43,691+18	(2) 3,487+4	(2) 2,608+63	(2) 13,462+26	
(3) 21,662	(3) 11,987+16	(3) 3,828+49	(3) 10,770	
(4) 4,737+6	(4) 5,131+20	(4) 6,602+31	(4) 9,211+14	
(5) 7,221+72	(5) 10,351+12	(5) 3,355+39	(5) 8,046+48	
(6) 1,186+42	(6) 9,621+22	(6) 2,609+71	(6) 7,143+36	
b.	c.	d.	e.	
(1) 5,024+27	(1) 2,441+16	(1) 21,709+31	(1) 8,421+7	
(2) 3,961+39	(2) 1,924+49	(2) 17,117+16	(2) 6,639+40	
(3) 3,169+26	(3) 1,539+62	(3) 13,693+55	(3) 5,311+53	
(4) 2,710+51	(4) 1,317+5	(4) 11,711+64	(4) 4,543	
(5) 2,367+82	(5) 1,150+47	(5) 10,231+3	(5) 3,968+52	
(6) 2,102+15	(6) 1,021+39	(6) 9,082+64	(6) 3,523+14	
f.	N.	O.	P.	
(1) 21,965+39	(1) 5,309	(1) 4,705	(1) 3,748+40	
(2) 17,319+16	(2) 8,745+69	(2) 8,080	(2) 6,006+60	
(3) 13,855+29	(3) 4,009+10	(3) 2,867+29	(3) 7,000+64	
(4) 11,850+4	(4) 3,097	(4) 7,009	(4) 7,898+53	
(5) 10,351+67	(5) 7,568+3	(5) 7,852+33	(5) 8,997+57	
(6) 9,189+82	(6) 6,800	(6) 7,907	(6) 9,989+58	

Q.	R.	S.	T.
(1) 5,789+69	(1) 581+12	(1) 2,173+ 8	(1) 406+11
(2) 4,900	(2) 1,907+11	(2) 180+50	(2) 1,030+30
(3) 9,008+78	(3) 1,148+10	(3) 710+46	(3) 740+ 1
(4) 8,000	(4) 398+36	(4) 381+74	(4) 1,064
(5) 8,989+88			
(6) 9,999+97			
U.	V.	W.	X.
(1) 800+ 3	(1) 283+63	(1) 1,179+35	(1) 7,047+ 9
(2) 883+ 5	(2) 847	(2) 1,600+19	(2) 6,400+ 7
(3) 1,054	(3) 247+39	(3) 8,700+ 2	(3) 10,100
(4) 192+39	(4) 1,540	(4) 5,009	(4) 10,746+27
Y.	Z.		
(1) 5,860	(1) 15,435		
(2) 10,001	(2) 10,682+80		
(3) 15,401	(3) 5,326+26		
(4) 7,987+59	(4) 9,908		

Ex. 24 (Pages 35, 36, 37).

A.	B.	C.	D.
(1) 2,301	(1) 4,254+ 67	(1) 2,345+ 50	(1) 1,780+100
(2) 1,230+ 20	(2) 3,700+100	(2) 4,507+ 99	(2) 2,009
(3) 3,002+ 57	(3) 2,549+ 56	(3) 3,890	(3) 2,576+249
(4) 1,446+ 19	(4) 1,537+ 44	(4) 4,050	(4) 1,808+303
(5) 2,304	(5) 4,314+ 60	(5) 1,638+200	(5) 3,097+198
(6) 5,060+100	(6) 4,010+140	(6) 2,909	(6) 2,988+277
E.	F.	G.	H.
(1) 350+ 85	(1) 742+ 69	(1) 1,366+ 32	(1) 244+178
(2) 180	(2) 658+208	(2) 617+249	(2) 369+772
(3) 306	(3) 385+490	(3) 222+246	(3) 555+843
(4) 574+103	(4) 400+299	(4) 697+461	(4) 577+342
(5) 200+ 10	(5) 679+589	(5) 997+320	(5) 244+624
(6) 179+258	(6) 803	(6) 409+649	(6) 803+400
I.	J.	K.	L.
(1) 683+442	(1) 961+152	(1) 249+ 54	(1) 1,113+293
(2) 784+ 93	(2) 329+503	(2) 318+ 38	(2) 2,119+ 13
(3) 418+304	(3) 203+ 74	(3) 907	(3) 10+130
(4) 219+505	(4) 487+210	(4) 7,145+962	(4) 2,139+ 30
(5) 487+857	(5) 482+870	(5) 5,082+ 22	(5) 17,232+ 6
(6) 399+709	(6) 671+151	(6) 4,093+ 27	(6) 73,805

ANSWERS.

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M.			N.			O.		
(1)	20,075+	1,075	(1)	5,146+	4,067	(1)	12,681+	1,013
(2)	3,544+	1,650	(2)	29,624+	2,049	(2)	12,595+	2,935
(3)	30,593+	1,359	(3)	5,498+	3,874	(3)	12,414+	3,076
(4)	9,050+	3,440	(4)	1,766+	3,374	(4)	1,887+	4,699
(5)	5,617+	4,139	(5)	9,378+	483	(5)	5,948+	1,404
(6)	24,074+	270	(6)	6,905+	310	(6)	9,684+	1,594
P.			Q.			R.		
(1)	197+	2,370	(1)	46,665+	3,625	(1)	45,293+	156
(2)	2,389,520+	41	(2)	59,926+	4,244	(2)	18,201+	1,186
(3)	2,604+	100	(3)	122,607+	1,303	(3)	43,905+	2,160
(4)	7,777		(4)	131,901+	4,937	(4)	47,364+	1,279
(5)	181		(5)	11,286+	2,992	(5)	36,581+	1,811
(6)	547		(6)	49,144+	2,465	(6)	52,333+	7,870
S.			T.			U.		
(1)	1,718+	45,850	(1)	124+	26,872	(1)	3+	1,875
(2)	5,345+	54,063	(2)	74,627		(2)	1,275	
(3)	3,627+	4,528	(3)	84,870,834+	3,575	(3)	9,165+	12,225
(4)	8,368+	9,897	(4)	207		(4)	10,000+	8,001
(5)	7,870+	16,320						
(6)	9,326+	23,341						
V.			W.			X.		
(1)	26,507+	6,977	(1)	75,811+	5,115	(1)	168,537+	5,949
(2)	43,304+	4,280	(2)	23,643+	282	(2)	162,368+	26,065
(3)	80,035+	4,352	(3)	24,111+	7,671	(3)	228,231+	13,240
(4)	63,499+	68	(4)	105,569+	844	(4)	186,717+	43,714
Y.								
(1)	52,715+	24,836						
(2)	141,178+	2,299						
(3)	104,670+	3,100						
(4)	100,007+	36,979						

AVERAGES.

Ex. 25 (Page 88).

A.			B.			C.		
(1)	2		(1)	30		(1)	29 lbs.	
(2)	2		(2)	40		(2)	8 min.	
(3)	4		(3)	157,287		(3)	27 days	
(4)	7		(4)	22		(4)	3 feet	
(5)	6		(5)	57				
(6)	20		(6)	6				

M.	N.	O.	P.	Q.	R.
(1) 28	(1) 49	(1) 1,184	(1) 38,245	(1) 249,281	(1) 36
(2) 33	(2) 103	(2) 9,142	(2) 46,810	(2) 102,318	(2) 42
(3) 39	(3) 218	(3) 13,101	(3) 93,068	(3) 300,279	(3) 44
(4) 40	(4) 519	(4) 51,783	(4) 15,355	(4) 412,440	(4) 93
(5) 46	(5) 530	(5) 71,886	(5) 84,152	(5) 493,006	(5) 118
(6) 47	(6) 763	(6) 65,937	(6) 48,001	(6) 768,569	(6) 215

S.	T.	U.	V.	W.	X.
(1) 4,800	(1) 4	(1) 81	(1) 3,188	(1) 420	(1) 2,706
(2) 9,960	(2) 9	(2) 223	(2) 4,614	(2) 630	(2) 8,221
(3) 6,518	(3) 20	(3) 602	(3) 8,000	(3) 800	(3) 7,184
(4) 28,225	(4) 26	(4) 844	(4) 5,603	(4) 85	(4) 24,000
(5) 19,102	(5) 41	(5) 1,202	(5) 6,717	(5) 4,020	(5) 19,355
(6) 43,173	(6) 47	(6) 3,357	(6) 20,007	(6) 4,242	(6) 20,001

Y.	Z.
(1) 96	(1) 6,002
(2) 212	(2) 450
(3) 291	(3) 15,861
(4) 631	(4) 945
(5) 1,130	(5) 23,396
(6) 5,455	(6) 63,000

Ex. 30 (Page 44).

A.	B.	C.	D.
£ s.	£ s.	£ s. d.	£ s. d.
(1) 2 10	(1) 126 17	(1) 1 12 7	(1) 11 10 8
(2) 5 3	(2) 691 6	(2) 4 5 5	(2) 163 11 2
(3) 14 7	(3) 2,962 11	(3) 9 0 4	(3) 72 2 5
(4) 69 15	(4) 2,055 0	(4) 14 1 8	(4) 262 11 0
(5) 129 8	(5) 3,664 15	(5) 12 6 5	(5) 167 15 7
(6) 357 9	(6) 1,000 10	(6) 26 3 7	(6) 224 14 5

E.	F.	G.	H.
£ s. d.	£ s. d.	£ s. d.	£ s. d.
(1) 334 9 7	(1) 6 11 2½	(1) 24 14 6	(1) 111 17 2½
(2) 579 9 8	(2) 8 14 10¾	(2) 61 11 3½	(2) 398 1 3¾
(3) 1,078 1 2	(3) 7 10 0	(3) 73 3 1¼	(3) 600 1 5¾
(4) 1,779 17 4	(4) 3 2 3½	(4) 29 14 4	(4) 655 15 2
(5) 1,661 13 3	(5) 9 14 10	(5) 70 3 10½	(5) 499 1 5½
(6) 3,462 2 6	(6) 7 0 7	(6) 99 9 6½	(6) 919 8 7½

I.			J.			K.		L.	
£	s.	d.	£	s.	d.	£	s.	£	s.
(1)	0	11	11	2	0	(1)	49	(1)	125
(2)	1	17	10	(2)	9	18	8	(2)	217
(3)	1	18	7½	(3)	7	19	4½	(3)	193
(4)	2	1	0½	(4)	12	17	2½	(4)	371
(5)	3	1	7½	(5)	17	9	6½	(5)	399
(6)	7	12	2½	(6)	20	6	11½	(6)	951

M.		N.		O.		P.	
£	s.	£	s.	£	s.	£	s.
(1)	36	(1)	2	(1)	4	(1)	6
(2)	28	(2)	11	(2)	2	(2)	4
(3)	53	(3)	9	(3)	5	(3)	8
(4)	120	(4)	7	(4)	7	(4)	13
(5)	256	(5)	81	(5)	29	(5)	31
(6)	583	(6)	119	(6)	49	(6)	48

Q.		R.	
(1)	1,987,684	(1)	6,048
(2)	£208 6s. 8d.	(2)	8,394 fl. 10d.
(3)	14,364	(3)	160
(4)	£233 6s. 11½d.	(4)	800
(5)	819,784	(5)	9,615,318
(6)	£1,376 16s. 8d.	(6)	250,000

EXAMINATIONS IN REDUCTION—(MONEY).

Ex. 31 (Pages 45, 46).

A.		B.		C.	
(1)	141,962	(1)	57,291	(1)	69,665
(2)	17,361	(2)	£16 13s. 4d.	(2)	1,020
(3)	1,323	(3)	£32,004 17s. 8½d.	(3)	16,399
(4)	£520 16s. 8d.	(4)	603,214 hf.-gs.	(4)	64½ gs.

D.		E.		F.	
(1)	£4 9s. 6½d.	(1)	4,242	(1)	9,481,443
(2)	9,657,215 (w)	(2)	£5,433 3s. 4d.	(2)	£2,083 10s. 11½d.
(3)	£517 16s. 6d.	(3)	698,472 (w)	(3)	300
(4)	4,639	(4)	127 hf.-gs. 9s.	(4)	420 yds.

N.			O.			P.			Q.		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1) 206	12	2 $\frac{3}{4}$	(1) 307	15	2 $\frac{1}{2}$	(1) 280	13	0 $\frac{1}{2}$	(1) 258	14	5 $\frac{1}{2}$
(2) 287	8	4 $\frac{3}{4}$	(2) 242	18	11 $\frac{1}{2}$	(2) 315	17	6 $\frac{3}{4}$	(2) 317	18	8 $\frac{1}{2}$
(3) 315	5	8 $\frac{1}{2}$	(3) 323	15	4	(3) 302	16	4 $\frac{3}{4}$	(3) 367	14	8
(4) 224	18	2 $\frac{3}{4}$	(4) 312	0	6 $\frac{1}{2}$	(4) 305	14	0 $\frac{1}{2}$	(4) 414	17	9 $\frac{3}{4}$

R.			S.			T.			U.		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1) 85	4	11 $\frac{1}{2}$	(1) 177	0	0 $\frac{3}{4}$	(1) 242	3	9	(1) 1,745	9	7
(2) 89	15	5 $\frac{3}{4}$	(2) 113	9	7 $\frac{1}{2}$	(2) 149	10	11	(2) 1,182	14	4 $\frac{1}{2}$
(3) 150	9	11 $\frac{1}{2}$	(3) 293	7	5 $\frac{1}{2}$	(3) 317	0	10 $\frac{1}{2}$	(3) 2,074	2	4 $\frac{1}{2}$
(4) 107	12	1 $\frac{1}{2}$	(4) 145	13	3 $\frac{1}{2}$	(4) 204	3	8	(4) 1,742	12	10 $\frac{1}{2}$

V.			W.			X.		
£	s.	d.	£	s.	d.	£	s.	d.
(1) 879	13	5 $\frac{1}{2}$	(1) 985	5	0 $\frac{1}{2}$	(1) 2,998	19	8
(2) 1,559	7	9 $\frac{3}{4}$	(2) 1,767	11	8 $\frac{1}{2}$	(2) 3,256	1	9 $\frac{3}{4}$
(3) 1,012	16	4 $\frac{3}{4}$	(3) 1,235	4	5	(3) 3,222	6	8
(4) 1,102	3	10 $\frac{1}{2}$	(4) 1,552	14	1 $\frac{1}{2}$	(4) 3,851	10	8 $\frac{1}{2}$

Y.		
£	s.	d.
(1) 4,417	16	9 $\frac{3}{4}$
(2) 3,196	3	3 $\frac{1}{2}$
(3) 3,853	5	10 $\frac{1}{2}$
(4) 4,470	11	4 $\frac{1}{2}$

Ex. 33 (Pages 52-55).

A.			B.			C.		
£	s.	d.	£	s.	d.	£	s.	d.
(1) 195	5	1 $\frac{1}{2}$	(1) 2,460	6	6 $\frac{1}{2}$	(1) 2,282	12	7
(2) 632	15	2	(2) 944	1	3	(2) 6,130	17	8 $\frac{1}{2}$
(3) 342	0	11 $\frac{1}{2}$	(3) 387	10	3 $\frac{1}{2}$	(3) 3,255	17	5 $\frac{1}{2}$
(4) 607	7	9	(4) 1,102	18	2 $\frac{1}{2}$	(4) 2,883	11	9 $\frac{1}{2}$

D.			E.			F.		
£	s.	d.	£	s.	d.	£	s.	d.
(1) 10,720	9	0 $\frac{3}{4}$	(1) 7,947	7	2 $\frac{1}{2}$	(1) 15,584	12	8 $\frac{1}{2}$
(2) 18,699	7	0 $\frac{1}{2}$	(2) 8,823	2	11 $\frac{1}{2}$	(2) 19,425	14	1 $\frac{1}{2}$
(3) 16,025	2	7 $\frac{3}{4}$	(3) 15,545	16	8 $\frac{1}{2}$	(3) 7,286	1	9 $\frac{1}{2}$
(4) 9,703	7	11 $\frac{1}{2}$	(4) 12,051	19	5 $\frac{1}{2}$	(4) 18,047	19	3 $\frac{1}{2}$

G.				H.				I.			
	£	s.	d.		£	s.	d.		£	s.	d.
(1)	50,300	4	1½	(1)	11,941	11	11½	(1)	81,706	17	5½
(2)	53,099	17	2½	(2)	18,272	9	5½	(2)	69,810	16	7½
(3)	47,462	4	9½	(3)	54,024	17	5	(3)	70,508,743	13	2½
(4)	60,141	8	7½								

J.				K.				L.			
	£	s.	d.		£	s.	d.		£	s.	d.
(1)	209,100	4	8½	(1)	408,104	7	5	(1)	43,636,212	8	4
(2)	266,929	10	3½	(2)	164,545	1	9	(2)	73,351,242	19	6½
(3)	165,793	14	1	(3)	296,422	17	8½				

EXAMINATIONS IN COMPOUND ADDITION.

Ex. 34 (Pages 56, 57).

A.				B.				C.			
	£	s.	d.		£	s.	d.		£	s.	d.
(1)	57,332	6	2½	(1)	125,874	18	3½	(1)	516	4	3½
(2)	1,265	11	0	(2)	103	1	7	(2)	4	10	10
(3)	0	11	9½	(3)	0	13	0	(3)	406,558	12	5½(w)
(4)	1	12	7	(4)	20	16	0	(4)	2	3	4

D.				E.				F.			
	£	s.	d.		£	s.	d.		£	s.	d.
(1)	45	0	0	(1)	2	1	8½	(1)	646,177	3	11½
(2)	21	6	2½	(2)	55	0	0	(2)	22	2	0
(3)	251,072	1	9½	(3)	98,547	15	8	(3)	171,910	7	6½
(4)	1	0	0	(4)	1,035	12	10	(4)	45	6	0½

G.			
(1)	£110,218	4s.	1½d.
(2)		2s.	6d.
(3)	7,022	two-pences.	
(4)	£28	8s.	2d.

COMPOUND SUBTRACTION.

Ex. 35 (Pages 58, 59).

A.	B.	C.	D.	E.	F.
<i>d.</i>	<i>d.</i>	<i>s.</i> <i>d.</i>	<i>s.</i> <i>d.</i>	<i>s.</i> <i>d.</i>	<i>s.</i> <i>d.</i>
(1) 5	(1) 2	(1) 3 12 $\frac{1}{4}$	(1) 6 10 $\frac{1}{4}$	(1) 4 8 $\frac{3}{4}$	(1) 6 0 $\frac{1}{2}$
(2) 4 $\frac{1}{2}$	(2) 2 $\frac{1}{2}$	(2) 2 1 $\frac{1}{2}$	(2) 7 3 $\frac{3}{4}$	(2) 2 10 $\frac{1}{4}$	(2) 9 0
(3) 1 $\frac{1}{2}$	(3) 1 $\frac{1}{2}$	(3) 1 0 $\frac{3}{4}$	(3) 11 5 $\frac{3}{4}$	(3) 3 11 $\frac{1}{4}$	(3) 0 3 $\frac{1}{2}$
(4) 3	(4) 6 $\frac{1}{4}$	(4) 5 3 $\frac{3}{4}$	(4) 0 7 $\frac{3}{4}$	(4) 3 0 $\frac{3}{4}$	(4) 9 1
(5) 2 $\frac{1}{2}$	(5) 3 $\frac{1}{2}$	(5) 4 0 $\frac{1}{4}$	(5) 5 8 $\frac{1}{2}$	(5) 2 8 $\frac{3}{4}$	(5) 6 0 $\frac{3}{4}$
(6) 1	(6) 7	(6) 4 0 $\frac{1}{2}$	(6) 3 0 $\frac{1}{4}$	(6) 0 11	(6) 8 10 $\frac{3}{4}$

G.	H.	I.	J.
£ <i>s.</i> <i>d.</i>	£ <i>s.</i> <i>d.</i>	£ <i>s.</i> <i>d.</i>	£ <i>s.</i> <i>d.</i>
(1) 11 3 10	(1) 27 0 11 $\frac{3}{4}$	(1) 57 19 11	(1) 30 17 4 $\frac{1}{2}$
(2) 22 7 7 $\frac{1}{2}$	(2) 25 0 0 $\frac{3}{4}$	(2) 15 17 10 $\frac{3}{4}$	(2) 67 0 11 $\frac{1}{2}$
(3) 48 7 10	(3) 56 16 8 $\frac{3}{4}$	(3) 5 19 0 $\frac{1}{2}$	(3) 30 0 11 $\frac{1}{2}$
(4) 3 17 5 $\frac{1}{2}$	(4) 17 19 0 $\frac{1}{2}$	(4) 50 17 0 $\frac{1}{2}$	(4) 20 0 10 $\frac{3}{4}$

K.	L.	M.	N.
£ <i>s.</i> <i>d.</i>	£ <i>s.</i> <i>d.</i>	£ <i>s.</i> <i>d.</i>	£ <i>s.</i> <i>d.</i>
(1) 20 19 0 $\frac{3}{4}$	(1) 3 19 7 $\frac{1}{2}$	(1) 20 19 11 $\frac{1}{2}$	(1) 2 19 11 $\frac{3}{4}$
(2) 37 10 0 $\frac{3}{4}$	(2) 46 1 6 $\frac{1}{2}$	(2) 29 19 0 $\frac{1}{4}$	(2) 9 19 11 $\frac{1}{2}$
(3) 20 19 10 $\frac{3}{4}$	(3) 10 17 11	(3) 11 10 11 $\frac{1}{4}$	(3) 9 19 6 $\frac{1}{2}$
(4) 3 15 11 $\frac{3}{4}$	(4) 23 1 0 $\frac{1}{2}$	(4) 10 0 6	(4) 26 4 11 $\frac{1}{4}$

O.	P.
£ <i>s.</i> <i>d.</i>	£ <i>s.</i> <i>d.</i>
(1) 17 17 5 $\frac{1}{2}$	(1) 27 0 10 $\frac{1}{2}$
(2) 20 16 8	(2) 10 19 0 $\frac{3}{4}$
(3) 40 19 11 $\frac{3}{4}$	(3) 40 0 11
(4) 56 18 9 $\frac{3}{4}$	(4) 2 8 11 $\frac{1}{2}$

Ex. 36 (Pages 60, 61).

A.	B.	C.
£ <i>s.</i> <i>d.</i>	£ <i>s.</i> <i>d.</i>	£ <i>s.</i> <i>d.</i>
(1) 15 0 11 $\frac{1}{2}$	(1) 118 18 8 $\frac{1}{2}$	(1) 4,009 6 0 $\frac{1}{2}$
(2) 340 16 9 $\frac{1}{2}$	(2) 600 19 11 $\frac{3}{4}$	(2) 1,609 0 11 $\frac{1}{2}$
(3) 209 6 3 $\frac{1}{2}$	(3) 809 13 7 $\frac{1}{2}$	(3) 6,148 19 4 $\frac{1}{2}$
(4) 30 0 11 $\frac{1}{2}$	(4) 900 8 7 $\frac{1}{2}$	(4) 560 3 7 $\frac{1}{2}$

D.				E.				F.			
	£	s.	d.		£	s.	d.		£	s.	d.
(1)	9,188	19	11½	(1)	20,074	19	5½	(1)	3,183	5	7½
(2)	11,000	19	0½	(2)	50,008	0	0½	(2)	49,046	17	1½
(3)	2,996	18	6	(3)	20,906	13	0½	(3)	19,919	19	10
(4)	19,809	0	11½	(4)	990	15	10½	(4)	307	19	11
				(5)	6,703	5	6½	(5)	30,722	0	10½
				(6)	37,790	1	5½	(6)	19,070	17	5½

G.				H.				I.			
	£	s.	d.		£	s.	d.		£	s.	d.
(1)	974	15	10½	(1)	11,011	13	11½	(1)	30,160	17	3½
(2)	459,827	2	1½	(2)	5,163	14	2½	(2)	28,890	0	1½
(3)	1,852	18	11½	(3)	15,868	19	5½	(3)	71,109	4	7
(4)	14,107	1	0½	(4)	433	1	0½	(4)	13,891	15	0½
(5)	30,561	8	8½	(5)	10,907	7	9½	(5)	41,100	10	11½
(6)	915	10	2	(6)	27,109	0	10½	(6)	10,995	0	5½

J.				K.				L.			
	£	s.	d.		£	s.	d.		£	s.	d.
(1)	740	7	9½(w)	(1)	10,688	9	9½	(1)	48,145	19	0½
(2)	5,360	18	10½	(2)	18,909	14	0½(w)	(2)	607,196	17	2½(w)
(3)	40,739	0	0	(3)	59,098	0	10½	(3)	14,542	13	8½
(4)	13,606	17	5½	(4)	40,960	19	1	(4)	1,994	18	1½

Ex. 37 (Page 62).

A.				B.				C.			
	£	s.	d.		£	s.	d.		£	s.	d.
(1)	60	2	6	(1)	2,989	0	0½(w)	(1)	200,000	0	9(w)
(2)	0	13	6	(2)	14	1	2½	(2)	3	0	6
(3)	30,100	10	10½(w)	(3)	929	4	3½	(3)	22	13	0
(4)	2	19	11	(4)	6,005	1	10½	(4)	158	12	8½

D.			
	£	s.	d.
(1)	70,010	4	11½(w)
(2)	240	1	2½
(3)	2	6	9
(4)	3,909	10	0

EXAMINATIONS IN COMPOUND ADDITION AND
SUBTRACTION.

Ex. 38 (Pages 63, 64).

A.			B.			C.					
(1)	£	s.	d.	(1)	£	s.	d.	(1)	£	s.	d.
(1)	1	15	8½	(1)	0	0	5½	(1)	36	8	2½
(2)	41	4	6	(2)	2	1	0	(2)	1	11	4
(3)	0	12	2½	(3)	36	12	0	(3)	0	7	10
(4)	0	2	8½	(4)	944	0	4	(4)	0	0	1

D.		E.	
(1)	5 three-pences	(1)	7s. 9½d.
(2)	17s. 5d.	(2)	£2,470 18s. 5½d.
(3)	4s. 5½d.	(3)	£33 1s. 6d.
(4)	£32 19s. 0d.	(4)	£37 5s. 2d. sideboard.
			£17 9s. 7d. table.
			£8 10s. 9d. carpet.

F.	
(1)	2s. 3d.
(2)	£7,034,520 10s. 2½d. (w)
(3)	£100
(4)	£13 A.
	£17 B.
	£20 C.

D.			E.			F.		
	£	s. d.		£	s. d.		£	s. d.
(1)	9,188	19 11½	(1)	20,074	19 5½	(1)	3,183	
(2)	11,000	19 0½	(2)	50,008	0 0½	(2)	49,046	1
(3)	2,996	18 6	(3)	20,906	13 0½	(3)	19,919	1
(4)	19,809	0 11½	(4)	990	15 10½	(4)	307	1
			(5)	6,703	5 6½	(5)	30,722	
			(6)	37,790	1 5½	(6)	19,070	1

G.			H.			I.		
	£	s. d.		£	s. d.		£	s. d.
(1)	974	15 10½	(1)	11,011	13 11½	(1)	30,160	1
(2)	459,827	2 1½	(2)	5,163	14 2½	(2)	28,890	
(3)	1,852	18 11½	(3)	15,868	19 5½	(3)	71,109	
(4)	14,107	1 0½	(4)	433	1 0½	(4)	13,891	1
(5)	30,561	8 8½	(5)	10,907	7 9½	(5)	41,100	1
(6)	915	10 2	(6)	27,109	0 10½	(6)	10,995	

J.			K.			L.		
	£	s. d.		£	s. d.		£	s. d.
(1)	740	7 9½ (w)	(1)	10,688	9 9½	(1)	48,145	19
(2)	5,360	18 10½	(2)	18,909	14 0½ (w)	(2)	607,196	17
(3)	40,739	0 0	(3)	59,098	0 10½	(3)	14,542	13
(4)	13,606	17 5½	(4)	40,960	19 1	(4)	1,994	18

Ex. 37 (Page 62).

A.			B.			C.		
	£	s. d.		£	s. d.		£	s. d.
(1)	60	2 6	(1)	2,989	0 0½ (w)	(1)	200,000	0 9
(2)	0	13 6	(2)	14	1 2½	(2)	3	0 6
(3)	80,100	10 10½ (w)	(3)	929	4 3½	(3)	22	13 0
(4)	2	19 11	(4)	6,005	1 10½	(4)	158	12 8½

D.		
	£	s. d.
(1)	70,010	4 11½ (w)
(2)	240	1 2½
(3)	2	6 9
(4)	2,000	10 0

**EXAMINATIONS IN COMPOUND ADDITION AND
SUBTRACTION.**

Ex. 38 (Pages 63, 64).

A.			B.			C.		
	£	s. d.		£	s. d.		£	s. d.
(1)	1	15 8½	(1)	0	0 5½	(1)	36	8 2½
(2)	41	4 6	(2)	2	1 0	(2)	1	11 4
(3)	0	12 2½	(3)	36	12 0	(3)	0	7 10
(4)	0	2 8½	(4)	944	0 4	(4)	0	0 1

D.		E.	
(1)	5 three-pences	(1)	7s. 9½d.
(2)	17s. 5d.	(2)	£2,470 18s. 5½d.
(3)	4s. 5½d.	(3)	£33 1s. 6d.
(4)	£32 19s. 0d.	(4)	£37 5s. 2d. sideboard.
			£17 9s. 7d. table.
			£8 10s. 9d. carpet.

F.	
(1)	2s. 3d.
(2)	£7,034,520 10s. 2½d. (w)
(3)	£100
(4)	£13 A.
	£17 B.
	£20 C.

ANSWERS.

COMPOUND MULTIPLICATION.

Ex. 39 (Pages 65-67).

A			B			C			D		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1)	4	2½	(1)	9	6½	(1)	0	8 1	(1)	1	1 5½
(2)	4	6½	(2)	12	10½	(2)	1	0 7	(2)	0	16 11½
(3)	8	5	(3)	15	8½	(3)	0	18 1	(3)	1	8 0½
(4)	6	10½	(4)	7	10½	(4)	1	8 11	(4)	1	18 7½
(5)	8	9½	(5)	19	3½	(5)	1	2 10	(5)	1	11 10½

E			F			G—a			b		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1)	0	14 7½	(1)	1	12 2½	(1)	4	9½	(1)	0	6 10
(2)	1	4 4½	(2)	2	16 10½	(2)	7	2½	(2)	0	10 3
(3)	2	11 10½	(3)	2	11 2½	(3)	9	7	(3)	0	13 8
(4)	1	14 7½	(4)	2	0 8½	(4)	11	11½	(4)	0	17 1
(5)	2	5 9	(5)	3	0 11½	(5)	14	4½	(5)	1	0 6
						(6)	16	9½	(6)	1	3 11

c			d			e			f		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1)	0	7 4½	(1)	0	10 5	(1)	0	13 2½	(1)	0	14 1½
(2)	0	11 0½	(2)	0	15 7½	(2)	0	19 9½	(2)	1	1 2½
(3)	0	14 9	(3)	1	0 10	(3)	1	6 5	(3)	1	8 3
(4)	0	18 5½	(4)	1	6 0½	(4)	1	13 0½	(4)	1	15 3½
(5)	1	2 1½	(5)	1	11 3	(5)	1	19 7½	(5)	2	2 4½
(6)	1	5 9½	(6)	1	16 5½	(6)	2	6 2½	(6)	2	9 5½

g			h			i			j		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1)	0	17 1	(1)	0	11 6½	(1)	0	13 1	(1)	0	11 5½
(2)	1	5 7½	(2)	0	17 3½	(2)	0	19 7½	(2)	0	17 2½
(3)	1	14 2	(3)	1	3 1	(3)	1	6 2	(3)	1	2 11
(4)	2	2 8½	(4)	1	8 10½	(4)	1	12 8½	(4)	1	8 7½
(5)	2	11 3	(5)	1	14 7½	(5)	1	19 3	(5)	1	14 4½
(6)	2	19 9½	(6)	2	0 4½	(6)	2	5 9½	(6)	2	0 1½

<i>e</i>			<i>d</i>			<i>c</i>			<i>f</i>		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1) 20	18	10	(1) 54	10	8½	(1) 64	14	6½	(1) 59	8	1½
(2) 23	18	8	(2) 62	6	6	(2) 73	19	6	(2) 67	17	10
(3) 26	18	6	(3) 70	2	3½	(3) 83	4	5½	(3) 76	7	6½
(4) 29	18	4	(4) 77	18	1½	(4) 92	9	4½	(4) 84	17	3½
(5) 32	18	2	(5) 85	13	11½	(5) 101	14	3½	(5) 93	7	0½
(6) 35	18	0	(6) 93	9	9	(6) 110	19	3	(6) 101	16	9

<i>g</i>			<i>h</i>			<i>i</i>			<i>j</i>		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1) 40	8	2½	(1) 55	18	1½	(1) 73	6	11½	(1) 87	13	9½
(2) 46	3	8	(2) 63	17	10	(2) 83	16	6	(2) 100	4	4
(3) 51	19	1½	(3) 71	17	6½	(3) 94	6	0½	(3) 112	14	10½
(4) 57	14	7	(4) 79	17	3½	(4) 104	15	7½	(4) 125	5	5
(5) 63	10	0½	(5) 87	17	0½	(5) 115	5	2½	(5) 137	15	11½
(6) 69	5	6	(6) 95	16	9	(6) 125	14	9	(6) 150	6	6

<i>k</i>			<i>l</i>			<i>m</i>			<i>n</i>		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1) 94	1	11½	(1) 111	1	2½	(1) 117	10	6½	(1) 129	16	5
(2) 107	10	10	(2) 126	18	6	(2) 134	6	4	(2) 148	7	4
(3) 120	19	8½	(3) 142	15	9½	(3) 151	2	1½	(3) 166	18	3
(4) 134	8	6½	(4) 158	13	1½	(4) 167	17	11	(4) 185	9	2
(5) 147	17	4½	(5) 174	10	5½	(5) 184	13	8½	(5) 204	0	1
(6) 161	6	3	(6) 190	7	9	(6) 201	9	6	(6) 222	11	0

<i>o</i>			<i>p</i>			<i>q</i>			<i>r</i>		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1) 110	16	2½	(1) 125	11	8½	(1) 111	13	1½	(1) 123	14	9½
(2) 126	12	10	(2) 143	10	6	(2) 127	12	2	(2) 141	8	4
(3) 142	9	5½	(3) 161	9	3½	(3) 143	11	2½	(3) 159	1	10½
(4) 158	6	0½	(4) 179	8	1½	(4) 159	10	2½	(4) 176	15	5
(5) 174	2	7½	(5) 197	6	11½	(5) 175	9	2½	(5) 194	8	11½
(6) 189	19	3	(6) 215	5	9	(6) 191	8	3	(6) 212	2	6

<i>s</i>			<i>t</i>			<i>u</i>			<i>v</i>		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1) 132	5	1½	(1) 110	2	6½	(1) 138	11	8½	(1) 104	11	4½
(2) 151	3	0	(2) 125	17	2	(2) 158	7	8	(2) 119	10	2
(3) 170	0	10½	(3) 141	11	9½	(3) 178	3	7½	(3) 134	8	11½
(4) 188	18	9	(4) 157	6	5½	(4) 197	19	7	(4) 149	7	8½
(5) 207	16	7½	(5) 173	1	1½	(5) 217	15	6½	(5) 164	6	5½
(6) 226	14	6	(6) 188	15	9	(6) 237	11	6	(6) 179	5	3

	<i>w</i>		
	£	s.	d.
(1)	118	2	4½
(2)	134	19	10
(3)	151	17	3½
(4)	168	14	9½
(5)	185	12	3½
(6)	202	9	9

	<i>s</i>		
	£	s.	d.
(1)	132	18	11½
(2)	151	18	10
(3)	170	18	8½
(4)	189	18	6½
(5)	208	18	4½
(6)	227	18	3

O—(1)			(2)			(3)			(4)		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1)	5	1	0	(1)	7	3	2½	(1)	16	1	7½
(2)	7	11	6	(2)	10	14	9½	(2)	24	2	5½
(3)	10	2	0	(3)	14	6	5	(3)	32	3	3
(4)	12	12	6	(4)	17	18	0½	(4)	40	4	0½
(5)	15	3	0	(5)	21	9	7½	(5)	48	4	10½
(6)	17	13	6	(6)	25	1	2½	(6)	56	5	8½
(7)	20	4	0	(7)	28	12	10	(7)	64	6	6
(8)	22	14	6	(8)	32	4	5½	(8)	72	7	3½
(9)	25	5	0	(9)	35	16	0½	(9)	80	8	1½
(10)	27	15	6	(10)	39	7	7½	(10)	88	8	11½
(11)	30	6	0	(11)	42	19	3	(11)	96	9	9

P—(1)			(2)			(3)			(4)		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1)	14	17	4½	(1)	19	8	0½	(1)	17	19	10
(2)	22	6	0½	(2)	29	2	0½	(2)	26	19	9
(3)	29	14	9	(3)	38	16	1	(3)	35	19	8
(4)	37	3	5½	(4)	48	10	1½	(4)	44	19	7
(5)	44	12	1½	(5)	58	4	1½	(5)	53	19	6
(6)	52	0	9½	(6)	67	18	1½	(6)	62	19	5
(7)	59	9	6	(7)	77	12	2	(7)	71	19	4
(8)	66	18	2½	(8)	87	6	2½	(8)	80	19	3
(9)	74	6	10½	(9)	97	0	2½	(9)	89	19	2
(10)	81	15	6½	(10)	106	14	2½	(10)	98	19	1
(11)	89	4	3	(11)	116	8	3	(11)	107	19	0

Q—(1)			(2)			(3)			(4)		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1)	11	3	7	(1)	15	11	0½	(1)	17	15	8
(2)	16	15	4½	(2)	23	6	6½	(2)	26	13	6
(3)	22	7	2	(3)	31	2	1	(3)	35	11	4
(4)	27	18	11½	(4)	38	17	7½	(4)	44	9	2
(5)	33	10	9	(5)	46	13	1½	(5)	53	7	0
(6)	39	2	6½	(6)	54	8	7½	(6)	62	4	10
(7)	44	14	4	(7)	62	4	2	(7)	71	2	8
(8)	50	6	1½	(8)	69	19	8½	(8)	80	0	6
(9)	55	17	11	(9)	77	15	2½	(9)	88	18	4
(10)	61	9	8½	(10)	85	10	8½	(10)	97	16	2
(11)	67	1	6	(11)	93	6	3	(11)	106	14	0

(4)		
£	s.	d.
(1)	19	16
(2)	29	14
(3)	39	12
(4)	49	10
(5)	59	8
(6)	69	6
(7)	79	4
(8)	89	2
(9)	99	0
(10)	108	18
(11)	118	16

R—(1)			(2)	(3)	(4)
£	s.	d.	£	s.	d.
(1) 85	6	0 $\frac{1}{2}$	(1) 89	11	2
(2) 52	19	0 $\frac{1}{2}$	(2) 59	6	9
(3) 70	12	1	(3) 79	2	4
(4) 88	5	1 $\frac{1}{2}$	(4) 98	17	11
(5) 105	18	1 $\frac{1}{2}$	(5) 118	13	6
(6) 123	11	1 $\frac{1}{2}$	(6) 138	9	1
(7) 141	4	2	(7) 158	4	8
(8) 158	17	2 $\frac{1}{2}$	(8) 178	0	3
(9) 176	10	2 $\frac{1}{2}$	(9) 197	15	10
(10) 194	3	2 $\frac{1}{2}$	(10) 217	11	5
(11) 211	16	3	(11) 237	7	0
(1) 21	5	11	(1) 21	5	11
(2) 31	18	10 $\frac{1}{2}$	(2) 31	18	10 $\frac{1}{2}$
(3) 42	11	10	(3) 42	11	10
(4) 53	4	9 $\frac{1}{2}$	(4) 53	4	9 $\frac{1}{2}$
(5) 63	17	9	(5) 63	17	9
(6) 74	10	8 $\frac{1}{2}$	(6) 74	10	8 $\frac{1}{2}$
(7) 85	3	8	(7) 85	3	8
(8) 95	16	7 $\frac{1}{2}$	(8) 95	16	7 $\frac{1}{2}$
(9) 106	9	7	(9) 106	9	7
(10) 117	2	6 $\frac{1}{2}$	(10) 117	2	6 $\frac{1}{2}$
(11) 127	15	6	(11) 127	15	6
(1) 27	17	1 $\frac{1}{2}$	(1) 27	17	1 $\frac{1}{2}$
(2) 41	15	8 $\frac{1}{2}$	(2) 41	15	8 $\frac{1}{2}$
(3) 55	14	3	(3) 55	14	3
(4) 69	12	9 $\frac{1}{2}$	(4) 69	12	9 $\frac{1}{2}$
(5) 83	11	4 $\frac{1}{2}$	(5) 83	11	4 $\frac{1}{2}$
(6) 97	9	11 $\frac{1}{2}$	(6) 97	9	11 $\frac{1}{2}$
(7) 111	8	6	(7) 111	8	6
(8) 125	7	0 $\frac{1}{2}$	(8) 125	7	0 $\frac{1}{2}$
(9) 139	5	7 $\frac{1}{2}$	(9) 139	5	7 $\frac{1}{2}$
(10) 153	4	2 $\frac{1}{2}$	(10) 153	4	2 $\frac{1}{2}$
(11) 167	2	9	(11) 167	2	9

S—(1)			(2)	(3)	(4)
£	s.	d.	£	s.	d.
(1) 40	1	4	(1) 15	14	1
(2) 60	2	0	(2) 23	11	1 $\frac{1}{2}$
(3) 80	2	8	(3) 31	8	2
(4) 100	3	4	(4) 39	5	2 $\frac{1}{2}$
(5) 120	4	0	(5) 47	2	3
(6) 140	4	8	(6) 54	19	3 $\frac{1}{2}$
(7) 160	5	4	(7) 62	16	4
(8) 180	6	0	(8) 70	13	4 $\frac{1}{2}$
(9) 200	6	8	(9) 78	10	5
(10) 220	7	4	(10) 86	7	5 $\frac{1}{2}$
(11) 240	8	0	(11) 94	4	6
(1) 32	1	7 $\frac{1}{2}$	(1) 32	1	7 $\frac{1}{2}$
(2) 48	2	5 $\frac{1}{2}$	(2) 48	2	5 $\frac{1}{2}$
(3) 64	3	3	(3) 64	3	3
(4) 80	4	0 $\frac{1}{2}$	(4) 80	4	0 $\frac{1}{2}$
(5) 96	4	10 $\frac{1}{2}$	(5) 96	4	10 $\frac{1}{2}$
(6) 112	5	8 $\frac{1}{2}$	(6) 112	5	8 $\frac{1}{2}$
(7) 128	6	6	(7) 128	6	6
(8) 144	7	3 $\frac{1}{2}$	(8) 144	7	3 $\frac{1}{2}$
(9) 160	8	1 $\frac{1}{2}$	(9) 160	8	1 $\frac{1}{2}$
(10) 176	8	11 $\frac{1}{2}$	(10) 176	8	11 $\frac{1}{2}$
(11) 192	9	9	(11) 192	9	9
(1) 39	16	3	(1) 39	16	3
(2) 59	14	3	(2) 59	14	3
(3) 79	12	4	(3) 79	12	4
(4) 99	10	5	(4) 99	10	5
(5) 119	8	6	(5) 119	8	6
(6) 139	6	7	(6) 139	6	7
(7) 159	4	8	(7) 159	4	8
(8) 179	2	9	(8) 179	2	9
(9) 199	0	10	(9) 199	0	10
(10) 218	18	11	(10) 218	18	11
(11) 238	17	0	(11) 238	17	0

T—(1)			(2)	(3)	(4)
£	s.	d.	£	s.	d.
(1) 46	1	6 $\frac{1}{2}$	(1) 70	16	1
(2) 69	2	3 $\frac{1}{2}$	(2) 106	4	1 $\frac{1}{2}$
(3) 92	3	1	(3) 141	12	2
(4) 115	3	10 $\frac{1}{2}$	(4) 177	0	2 $\frac{1}{2}$
(5) 138	4	7 $\frac{1}{2}$	(5) 212	8	3
(6) 161	5	4 $\frac{1}{2}$	(6) 247	16	3 $\frac{1}{2}$
(7) 184	6	2	(7) 283	4	4
(8) 207	6	11 $\frac{1}{2}$	(8) 318	12	4 $\frac{1}{2}$
(9) 230	7	8 $\frac{1}{2}$	(9) 354	0	5
(10) 253	8	5 $\frac{1}{2}$	(10) 389	8	5 $\frac{1}{2}$
(11) 276	9	3	(11) 424	16	6
(1) 81	15	4	(1) 81	15	4
(2) 122	13	0	(2) 122	13	0
(3) 163	10	8	(3) 163	10	8
(4) 204	8	4	(4) 204	8	4
(5) 245	6	0	(5) 245	6	0
(6) 286	3	8	(6) 286	3	8
(7) 327	1	4	(7) 327	1	4
(8) 367	19	0	(8) 367	19	0
(9) 408	16	8	(9) 408	16	8
(10) 449	14	4	(10) 449	14	4
(11) 490	12	0	(11) 490	12	0
(1) 115	3	1 $\frac{1}{2}$	(1) 115	3	1 $\frac{1}{2}$
(2) 172	14	8 $\frac{1}{2}$	(2) 172	14	8 $\frac{1}{2}$
(3) 230	6	3	(3) 230	6	3
(4) 287	17	9 $\frac{1}{2}$	(4) 287	17	9 $\frac{1}{2}$
(5) 345	9	4 $\frac{1}{2}$	(5) 345	9	4 $\frac{1}{2}$
(6) 403	0	11 $\frac{1}{2}$	(6) 403	0	11 $\frac{1}{2}$
(7) 460	12	6	(7) 460	12	6
(8) 518	4	0 $\frac{1}{2}$	(8) 518	4	0 $\frac{1}{2}$
(9) 575	15	7 $\frac{1}{2}$	(9) 575	15	7 $\frac{1}{2}$
(10) 633	7	2 $\frac{1}{2}$	(10) 633	7	2 $\frac{1}{2}$
(11) 690	18	9	(11) 690	18	9

U—(1)			(2)			(3)			(4)		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1) 77	0	3½	(1) 129	15	8	(1) 146	1	7	(1) 91	13	2½
(2) 115	10	5½	(2) 194	13	6	(2) 219	2	4½	(2) 137	9	9½
(3) 154	0	7	(3) 259	11	4	(3) 292	3	2	(3) 183	6	5
(4) 192	10	8½	(4) 324	9	2	(4) 365	3	11½	(4) 229	3	0½
(5) 231	0	10½	(5) 389	7	0	(5) 438	4	9	(5) 274	19	7½
(6) 269	11	0½	(6) 454	4	10	(6) 511	5	6½	(6) 320	16	2½
(7) 308	1	2	(7) 519	2	8	(7) 584	6	4	(7) 366	12	10
(8) 346	11	3½	(8) 584	0	6	(8) 657	7	1½	(8) 412	9	5½
(9) 385	1	5½	(9) 648	18	4	(9) 730	7	11	(9) 458	6	0½
(10) 423	11	7½	(10) 713	16	2	(10) 803	8	8½	(10) 504	2	7½
(11) 462	1	9	(11) 778	14	0	(11) 876	9	6	(11) 549	19	3

V—(1)			(2)			(3)			(4)		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1) 115	6	6	(1) 160	18	11½	(1) 139	4	2	(1) 187	11	8½
(2) 172	19	9	(2) 241	8	5½	(2) 208	16	3	(2) 281	7	6½
(3) 230	13	0	(3) 321	17	11	(3) 278	8	4	(3) 375	3	5
(4) 288	6	3	(4) 402	7	4½	(4) 348	0	5	(4) 468	19	3½
(5) 345	19	6	(5) 482	16	10½	(5) 417	12	6	(5) 562	15	1½
(6) 403	12	9	(6) 563	6	4½	(6) 487	4	7	(6) 656	10	11½
(7) 461	6	0	(7) 643	15	10	(7) 556	16	8	(7) 750	6	10
(8) 518	19	3	(8) 724	5	3½	(8) 626	8	9	(8) 844	2	8½
(9) 576	12	6	(9) 804.14	9½		(9) 696	0	10	(9) 937	18	6½
(10) 634	5	9	(10) 885	4	3½	(10) 765	12	11	(10) 1,031	14	4½
(11) 691	19	0	(11) 965	13	9	(11) 835	5	0	(11) 1,125	10	8

Ex. 40 (Page 68).

A			B			C		
£	s.	d.	£	s.	d.	£	s.	d.
(1) 301	4	11½	(1) 565	13	4	(1) 2,174	9	10
322	15	3½	583	6	10½	2,329	16	3
(2) 551	14	4	(2) 1,453	15	6½	(2) 2,963	15	1½
620	13	7½	1,495	6	3	3,010	16	0
(3) 851	10	10	(3) 1,185	17	6	(3) 3,361	17	6
869	2	4½	1,245	8	4½	3,565	12	6
(4) 894	15	2	(4) 1,664	9	8	(4) 2,662	2	6
976	2	0	1,702	6	3	2,846	19	10½
(5) 716	1	4½	(5) 2,443	6	0	(5) 5,900	10	0
773	7	0½	2,545	2	1	5,974	5	1½
(6) 553	19	10	(6) 2,640	1	10½	(6) 4,262	7	9
593	11	3	2,688	19	8½	4,465	7	2

D	£	s.	d.	£	s.	d.
(1)	4,849	6	8	(4)	10,039	17 6
	5,172	12	0		10,123	10 9½
(2)	4,940	8	2½	(5)	6,329	13 6
	4,990	6	3		6,905	2 0
(3)	7,619	1	3	(6)	7,759	14 3½
	7,760	3	1½		12,645	9 3

E—(1)	£	s.	d.	(2)	£	s.	d.	(3)	£	s.	d.
(1)	2,638	15	0½	(1)	2,348	9	6½	(1)	2,439	15	10
(2)	3,877	7	0	(2)	3,450	16	6	(2)	3,585	0	0
(3)	4,523	11	6	(3)	4,025	19	3	(3)	4,182	10	0
(4)	7,108	9	6	(4)	6,326	10	3	(4)	6,572	10	0
(5)	6,516	2	0½	(5)	5,799	6	0½	(5)	6,024	15	10
(4)	£	s.	d.	(5)	£	s.	d.	(6)	£	s.	d.
(1)	1,910	0	7½	(1)	3,432	7	11½	(1)	3,268	12	1½
(2)	2,806	11	6	(2)	5,043	10	6	(2)	4,802	17	0
(3)	3,274	6	9	(3)	5,884	2	3	(3)	5,603	6	6
(4)	5,145	7	9	(4)	9,246	9	3	(4)	8,805	4	6
(5)	4,716	12	1½	(5)	8,475	18	5½	(5)	8,071	9	1½

Ex. 41 (Pages 68, 69).

A—a	£	s.	d.	b	£	s.	d.	c	£	s.	d.
(1)	1,609	1	9½	(1)	2,665	1	10½	(1)	4,440	8	11½
(2)	2,104	3	10½	(2)	3,485	2	5½	(2)	5,806	14	9½
(3)	2,351	14	10½	(3)	3,895	2	9½	(3)	6,489	17	8½
(4)	2,846	16	11½	(4)	4,715	3	4½	(4)	7,856	3	6½
(5)	3,218	3	6½	(5)	5,330	3	9½	(5)	8,880	17	11
(6)	3,589	10	1½	(6)	5,945	4	2½	(6)	9,905	12	3½
d	£	s.	d.	e	£	s.	d.	f	£	s.	d.
(1)	1,984	4	1½	(1)	3,518	12	3	(1)	6,611	2	5½
(2)	2,594	14	7½	(2)	4,601	5	3	(2)	8,645	6	3½
(3)	2,899	19	10½	(3)	5,142	11	9	(3)	9,662	8	2½
(4)	3,510	10	4½	(4)	6,225	4	9	(4)	11,696	12	0½
(5)	3,968	8	3	(5)	7,037	4	6	(5)	13,222	4	11
(6)	4,426	6	1½	(6)	7,849	4	3	(6)	14,747	17	9½
g	£	s.	d.	h	£	s.	d.	i	£	s.	d.
(1)	5,586	12	6½	(1)	5,029	10	2½	(1)	5,299	15	2½
(2)	7,305	11	9½	(2)	6,577	1	0½	(2)	6,930	9	1½
(3)	8,165	1	5½	(3)	7,350	16	5½	(3)	7,745	16	1½
(4)	9,884	0	8½	(4)	8,898	7	3½	(4)	9,376	10	0½
(5)	11,173	5	1½	(5)	10,059	0	5	(5)	10,599	10	5½
(6)	12,462	9	6½	(6)	11,219	13	6½	(6)	11,822	10	10½

<i>j</i>			<i>k</i>			<i>l</i>		
£	s.	d.	£	s.	d.	£	s.	d.
(1) 2,258	15	6½	(1) 3,727	10	1½	(1) 8,978	7	1½
(2) 2,953	15	8½	(2) 4,874	8	7½	(2) 11,740	18	6½
(3) 3,301	5	9½	(3) 5,447	17	10½	(3) 13,122	4	2½
(4) 3,996	5	11½	(4) 6,594	16	4½	(4) 15,884	15	7½
(5) 4,517	11	1	(5) 7,455	0	8	(5) 17,956	14	2½
(6) 5,038	16	2½	(6) 8,315	4	1½	(6) 20,028	12	9½
<i>m</i>			<i>n</i>			<i>o</i>		
£	s.	d.	£	s.	d.	£	s.	d.
(1) 2,464	2	5½	(1) 3,975	14	2½	(1) 11,318	17	11½
(2) 3,222	6	3½	(2) 5,199	0	1½	(2) 14,801	12	8½
(3) 3,601	8	2½	(3) 5,810	13	1½	(3) 16,543	0	0½
(4) 4,359	12	0½	(4) 7,033	19	0½	(4) 20,025	14	9½
(5) 4,928	4	11	(5) 7,951	8	5½	(5) 22,637	15	10½
(6) 5,496	17	9½	(6) 8,868	17	10½	(6) 25,249	16	11½
<i>p</i>			<i>q</i>			<i>r</i>		
£	s.	d.	£	s.	d.	£	s.	d.
(1) 9,408	16	10½	(1) 6,874	14	2½	(1) 2,858	18	10½
(2) 12,303	17	5½	(2) 8,990	0	1½	(2) 3,738	12	4½
(3) 13,751	7	9½	(3) 10,047	13	1½	(3) 4,178	9	1½
(4) 16,646	8	4½	(4) 12,162	19	0½	(4) 5,058	2	7½
(5) 18,817	13	9½	(5) 13,749	8	5½	(5) 5,717	17	9
(6) 20,988	19	2½	(6) 15,335	17	10½	(6) 6,377	12	10½
<i>s</i>			<i>t</i>			<i>u</i>		
£	s.	d.	£	s.	d.	£	s.	d.
(1) 3,998	0	0½	(1) 2,128	15	9½	(1) 3,873	5	4½
(2) 5,228	3	1½	(2) 2,783	16	0½	(2) 5,065	0	10½
(3) 5,843	4	7½	(3) 3,111	6	2½	(3) 5,660	18	7½
(4) 7,073	7	8½	(4) 3,766	6	5½	(4) 6,852	14	1½
(5) 7,996	0	0½	(5) 4,257	11	7½	(5) 7,746	10	9
(6) 8,918	12	4½	(6) 4,748	16	9½	(6) 8,640	7	4½
<i>v</i>			<i>w</i>			<i>x</i>		
£	s.	d.	£	s.	d.	£	s.	d.
(1) 10,788	7	9½	(1) 7,526	15	4½	(1) 5,574	3	11½
(2) 14,107	17	10½	(2) 9,842	13	11½	(2) 7,289	6	8½
(3) 15,767	12	10½	(3) 11,000	13	3½	(3) 8,146	18	0½
(4) 19,087	2	11½	(4) 13,316	11	10½	(4) 9,862	0	9½
(5) 21,576	15	6½	(5) 15,053	10	9½	(5) 11,148	7	10½
(6) 24,066	8	1½	(6) 16,790	9	8½	(6) 12,434	14	11½

B				C				D			
	£	s.	d.		£	s.	d.		£	s.	d.
(1)—a	8,735	15	2	(1)—a	13,376	2	4½	(1)—a	23,237	11	6½
b	4,097	5	8	b	13,610	15	9	b	23,547	8	3
c	4,458	16	2	c	13,845	9	1½	c	24,167	1	7½
(2)—a	7,767	14	3½	(2)—a	9,811	6	10	(2)—a	16,585	17	8½
b	7,972	2	6½	b	9,972	3	8	b	17,215	14	7
c	8,880	19	1½	c	10,454	14	2	c	17,425	13	6½
(3)—a	5,960	15	8½	(3)—a	25,030	0	3½	(3)—a	16,747	0	8½
b	6,376	13	1	b	25,403	11	11	b	16,944	1	2½
c	6,515	5	6½	c	25,777	3	6½	c	17,141	1	8½
(4)—a	26,981	9	11½	(4)—a	41,233	6	5½	(4)—a	65,569	1	7½
b	27,510	10	11	b	42,394	16	6½	b	67,042	10	10½
c	28,039	11	10½	c	42,975	11	6½	c	68,516	0	1½
E				F							
	£	s.	d.		£	s.	d.				
(1)—a	60,529	18	7	(1)—a	49,073	2	6½				
b	61,173	17	3½	b	51,152	9	11½				
c	62,461	14	8½	c	57,390	12	1½				
(2)—a	37,336	15	6	(2)—a	29,386	5	10				
b	38,479	14	9	b	29,176	7	9½				
c	38,860	14	6	c	30,645	14	1				
(3)—a	55,098	13	2	(3)—a	109,432	5	8½				
b	56,688	0	10½	b	111,824	4	11½				
c	57,747	12	7½	c	113,618	4	4½				
(4)—a	85,343	17	0½	(4)—a	77,356	17	6				
b	86,881	11	7½	b	78,904	0	3				
c	89,957	0	8½	c	85,092	11	3				
G				H							
	£	s.	d.		£	s.	d.				
(1)—a	182,214	8	11½	(1)—a	209,742	14	2				
b	209,840	10	2½	b	211,840	2	8½				
c	238,642	2	11½	(2)—a	517,243	3	9				
(2)—a	187,842	18	1½	b	437,343	16	8				
b	159,172	2	11½	(3)—a	578,817	3	9				
c	232,332	0	3½	b	618,562	12	8½				
(3)—a	316,676	10	7½	(4)—a	316,708	6	8				
b	556,771	3	1½	b	274,780	9	4½				
c	620,934	7	6								
(4)—a	302,339	11	2½								
b	232,204	7	3½								
c	369,157	11	0½								
I				J							
	£	s.	d.		£	s.	d.				
(1)—a	615,847	18	4	(1)	18,000,658	5	3½				
b	625,085	12	8½	(2)	8,967,828	15	0				
(2)—a	1,823,994	15	10	(3)	44,294,639	13	11				
b	2,560,159	1	9½	(4)	33,335,054	13	9				
(3)—a	4,302,174	5	5								
b	4,574,885	6	4½								
(4)—a	2,103,944	8	0								
b	4,083,697	12	9								

K				L			
	£	s.	d.		£	s.	d.
(1)	31,391,065	9	11½	(1)	71,036,815	1	0½
(2)	14,874,746	2	11	(2)	100,982,859	17	11
(3)	34,073,039	11	2½	(3)	161,439,029	17	7½
(4)	54,496,555	12	5½	(4)	151,372,919	5	5

Ex. 42 (Page 70).

A			B			C					
	£	s.	d.		£	s.	d.		£	s.	d.
(1)	48	18	6	(1)	6	6	0	(1)	8,085	17	9½
(2)	120	5	6	(2)	19	2	6	(2)	979	12	9
(3)	105	3	10	(3)	172,998	3	8½	(3)	2	7	1½
(4)	129	0	10	(4)	11,564	13	9	(4)	1	2	5½

D			
	£	s.	d.
(1)	0	11	0
(2)	1,647	3	0
(3)	5	9	8½
(4)	153	2	6

Ex. 43 (Pages 71, 72).

A		B		C		D	
s.	d.	s.	d.	s.	d.	s.	d.
(1)	1 2	(1)	1 3	(1)	2 0½	(1)	1 2½
(2)	2 3	(2)	2 2½	(2)	1 9½	(2)	1 0 + 2
(3)	4 1½	(3)	1 4	(3)	1 5 + 2	(3)	0 8½ + 2
(4)	1 7½	(4)	2 5½	(4)	2 5½	(4)	1 11½ + 4

E		F		G—a		b	
s.	d.	s.	d.	s.	d.	s.	d.
(1)	0 2½ + 3	(1)	1 3	(1)	0 6½	(1)	1 1½
(2)	1 4½ + 3	(2)	0 5 + 6	(2)	0 4 + 2	(2)	0 9
(3)	1 7½ + 5	(3)	1 1½	(3)	0 3 + 2	(3)	0 6½
(4)	1 7½ + 4	(4)	1 4½	(4)	0 2½	(4)	0 5½ + 3
				(5)	0 2 + 2	(5)	0 4½
				(6)	0 1½ + 1	(6)	0 3½ + 3

c		d		e		f	
s.	d.	s.	d.	s.	d.	s.	d.
(1)	1 2½ + 1	(1)	1 6½	(1)	1 10½	(1)	2 3½ + 1
(2)	0 9½	(2)	1 0½ + 1	(2)	1 2½ + 1	(2)	1 6½
(3)	0 7½ + 1	(3)	0 9½	(3)	0 11 + 2	(3)	1 1½ + 3
(4)	0 5½ + 2	(4)	0 7½ + 3	(4)	0 8½ + 3	(4)	0 10½ + 4
(5)	0 4½ + 3	(5)	0 6 + 4	(5)	0 7½ + 4	(5)	0 9 + 3
(6)	0 4 + 5	(6)	0 5½ + 1	(6)	0 6½ + 3	(6)	0 7½ + 2

<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>
<i>s.</i> <i>d.</i>	<i>s.</i> <i>d.</i>	<i>s.</i> <i>d.</i>	<i>s.</i> <i>d.</i>
(1) 2 5	(1) 2 7 $\frac{1}{2}$	(1) 2 10 $\frac{1}{2}$ +1	(1) 3 0 $\frac{1}{2}$
(2) 1 7 $\frac{1}{2}$ +1	(2) 1 9 +2	(2) 1 10 $\frac{1}{2}$ +2	(2) 2 0 $\frac{1}{2}$
(3) 1 2 $\frac{1}{2}$	(3) 1 3 $\frac{3}{4}$ +2	(3) 1 5 +3	(3) 1 6 $\frac{1}{2}$ +2
(4) 0 11 $\frac{1}{2}$ +2	(4) 1 0 $\frac{1}{2}$ +4	(4) 1 1 $\frac{1}{2}$	(4) 1 2 $\frac{1}{2}$ +4
(5) 0 9 $\frac{1}{2}$ +4	(5) 0 10 $\frac{1}{2}$ +2	(5) 0 11 $\frac{1}{2}$ +5	(5) 1 0 $\frac{1}{2}$
(6) 0 8 $\frac{1}{2}$ +1	(6) 0 9 +2	(6) 0 9 $\frac{3}{4}$ +2	(6) 0 10 $\frac{1}{2}$

<i>k</i>	<i>l</i>	<i>m</i>	<i>n</i>
<i>s.</i> <i>d.</i>	<i>s.</i> <i>d.</i>	<i>s.</i> <i>d.</i>	<i>s.</i> <i>d.</i>
(1) 3 5	(1) 3 7 $\frac{1}{2}$	(1) 3 10 +1	(1) 4 4 $\frac{3}{4}$
(2) 2 3 $\frac{1}{2}$ +1	(2) 2 5	(2) 2 6 $\frac{3}{4}$	(2) 2 11 +2
(3) 1 8 $\frac{1}{2}$	(3) 1 9 $\frac{3}{4}$	(3) 1 11 +1	(3) 2 2 $\frac{1}{2}$ +2
(4) 1 4 $\frac{1}{2}$ +3	(4) 1 5 $\frac{1}{2}$ +3	(4) 1 6 $\frac{1}{2}$ +4	(4) 1 9 +2
(5) 1 1 $\frac{1}{2}$ +4	(5) 1 2 $\frac{1}{2}$	(5) 1 3 $\frac{1}{2}$ +3	(5) 1 5 $\frac{1}{2}$ +2
(6) 0 11 $\frac{1}{2}$ +6	(6) 1 0 $\frac{1}{2}$ +5	(6) 1 1 +5	(6) 1 3 +2

<i>o</i>	<i>p</i>	<i>q</i>	<i>r</i>
<i>s.</i> <i>d.</i>	<i>s.</i> <i>d.</i>	<i>s.</i> <i>d.</i>	<i>s.</i> <i>d.</i>
(1) 4 11 $\frac{1}{2}$ +1	(1) 4 11 $\frac{1}{2}$ +1	(1) 5 1 $\frac{1}{2}$	(1) 6 8 $\frac{1}{2}$
(2) 3 3 $\frac{1}{2}$ +1	(2) 3 3 $\frac{3}{4}$	(2) 3 4 $\frac{3}{4}$ +1	(2) 4 5 $\frac{1}{2}$ +2
(3) 2 5 $\frac{1}{2}$ +3	(3) 2 5 $\frac{3}{4}$ +1	(3) 2 6 $\frac{1}{4}$ +2	(3) 3 4 $\frac{1}{2}$
(4) 1 11 $\frac{3}{4}$	(4) 1 11 $\frac{1}{2}$ +2	(4) 2 0 $\frac{3}{4}$	(4) 2 8 +4
(5) 1 7 $\frac{3}{4}$ +1	(5) 1 7 $\frac{1}{2}$ +3	(5) 1 8 $\frac{1}{2}$ +4	(5) 2 2 $\frac{3}{4}$ +2
(6) 1 4 $\frac{3}{4}$ +6	(6) 1 5 +1	(6) 1 5 $\frac{1}{2}$	(6) 1 11

<i>s.</i>	<i>t</i>	<i>u</i>	<i>v</i>
<i>s.</i> <i>d.</i>	<i>s.</i> <i>d.</i>	<i>s.</i> <i>d.</i>	<i>s.</i> <i>d.</i>
(1) 7 6 $\frac{1}{2}$	(1) 7 3 +1	(1) 8 9 $\frac{3}{4}$	(1) 9 0 +1
(2) 5 0 +2	(2) 4 10 +1	(2) 5 10 $\frac{1}{2}$	(2) 6 0 +1
(3) 3 9 +2	(3) 3 7 $\frac{1}{2}$ +1	(3) 4 4 $\frac{3}{4}$ +2	(3) 4 6 +1
(4) 3 0 +2	(4) 2 10 $\frac{3}{4}$ +2	(4) 3 6 $\frac{1}{2}$ +1	(4) 3 7 $\frac{1}{2}$
(5) 2 6 +2	(5) 2 5 +1	(5) 2 11 $\frac{1}{2}$	(5) 3 0 +1
(6) 2 1 $\frac{3}{4}$ +1	(6) 2 0 $\frac{3}{4}$ +4	(6) 2 6 +6	(6) 2 6 $\frac{3}{4}$ +4

<i>w</i>	<i>x</i>
<i>s.</i> <i>d.</i>	<i>s.</i> <i>d.</i>
(1) 8 4 $\frac{3}{4}$ +1	(1) 9 11 $\frac{1}{2}$
(2) 5 7 $\frac{1}{4}$	(2) 6 7 $\frac{1}{2}$
(3) 4 2 $\frac{1}{2}$ +3	(3) 4 11 $\frac{1}{2}$ +2
(4) 3 4 $\frac{1}{2}$ +2	(4) 3 11 $\frac{1}{2}$ +4
(5) 2 9 $\frac{1}{2}$ +3	(5) 3 3 $\frac{3}{4}$
(6) 2 4 $\frac{3}{4}$ +2	(6) 2 10 +2

COMPOUND DIVISION.

Ex. 43.

H			I			J					
£	s.	d.	£	s.	d.	£	s.	d.			
(1)	0	3	6	(1)	0	5	4½+6	(1)	1	1	7
(2)	0	7	2½+3	(2)	0	10	1½	(2)	1	3	0¾
(3)	0	15	2½+2	(3)	1	3	8½+3	(3)	0	13	2½+8
(4)	1	4	3½+3	(4)	1	5	3¾+2	(4)	0	14	1+3

K			L			M					
£	s.	d.	£	s.	d.	£	s.	d.			
(1)	0	8	5½+6	(1)	0	6	0½	(1)	0	11	0½
(2)	0	13	0½+6	(2)	0	10	2+4	(2)	0	14	2½+2
(3)	1	5	4½+1	(3)	1	4	7+5	(3)	1	6	5½+11
(4)	1	17	4+2	(4)	2	13	11½+5	(4)	1	11	7½+10

N—a			b			c					
£	s.	d.	£	s.	d.	£	s.	d.			
(1)	4	1	4½+1	(1)	4	17	6½	(1)	1	15	3
(2)	2	14	3+1	(2)	3	5	0+2	(2)	1	3	6
(3)	2	0	8½+1	(3)	2	8	9+2	(3)	0	17	7½
(4)	1	12	6½+3	(4)	1	19	0+2	(4)	0	14	1+4
(5)	1	7	1½+1	(5)	1	12	6+2	(5)	0	11	9
(6)	1	3	3+1	(6)	1	7	10½+3	(6)	0	10	0½+3
(7)	1	0	4+5	(7)	1	4	4½+2	(7)	0	8	9¾
(8)	0	18	1+1	(8)	1	1	8+2	(8)	0	7	10
(9)	0	16	3½+3	(9)	0	19	6+2	(9)	0	7	0½+4
(10)	0	14	9½+3	(10)	0	17	8½+1	(10)	0	6	4½+7
(11)	0	13	6½+1	(11)	0	16	3+2	(11)	0	5	10½

d			O—a			b					
£	s.	d.	£	s.	d.	£	s.	d.			
(1)	2	15	11½+1	(1)	1	4	10½	(1)	1	19	4½+1
(2)	1	17	3¾+2	(2)	0	16	6¾+1	(2)	1	6	3+1
(3)	1	7	11½+3	(3)	0	12	5+2	(3)	0	19	8½+1
(4)	1	2	4½	(4)	0	9	11½+1	(4)	0	15	9+1
(5)	0	18	7½+5	(5)	0	8	8½+4	(5)	0	13	1½+1
(6)	0	15	11½+6	(6)	0	7	1+6	(6)	0	11	3+1
(7)	0	13	11½+7	(7)	0	6	2½+2	(7)	0	9	10+5
(8)	0	12	5½+2	(8)	0	5	6½+1	(8)	0	8	9+1
(9)	0	11	2½+5	(9)	0	4	11½+6	(9)	0	7	10½+1
(10)	0	10	2+7	(10)	0	4	6+10	(10)	0	7	1½+8
(11)	0	9	3¾+11	(11)	0	4	1½+10	(11)	0	6	6¾+1

<i>c</i>			<i>d</i>			<i>P-a</i>		
<i>£</i>	<i>s.</i>	<i>d.</i>	<i>£</i>	<i>s.</i>	<i>d.</i>	<i>£</i>	<i>s.</i>	<i>d.</i>
(1)	8	19 4 +1	(1)	4	19 8 $\frac{1}{2}$	(1)	4	6 9 +1
(2)	2	12 10 $\frac{1}{2}$	(2)	3	6 5 $\frac{1}{2}$ + 1	(2)	2	17 10 +1
(3)	1	19 8 +1	(3)	2	9 10 $\frac{1}{2}$ + 2	(3)	2	3 4 $\frac{1}{2}$ +1
(4)	1	11 8 $\frac{1}{2}$ +2	(4)	1	19 10 $\frac{1}{2}$ + 4	(4)	1	14 8 $\frac{1}{2}$ +4
(5)	1	6 5 $\frac{1}{2}$ +3	(5)	1	18 2 $\frac{1}{2}$ + 4	(5)	1	8 11 +1
(6)	1	2 8 +1	(6)	1	8 5 $\frac{1}{2}$ + 5	(6)	1	4 9 $\frac{1}{2}$ +6
(7)	0	19 10 +1	(7)	1	4 11 + 6	(7)	1	1 8 $\frac{1}{2}$ +1
(8)	0	17 7 $\frac{1}{2}$ +3	(8)	1	2 1 $\frac{1}{2}$ + 7	(8)	0	19 3 $\frac{1}{2}$ +4
(9)	0	15 10 $\frac{1}{2}$ +7	(9)	0	19 11 $\frac{1}{2}$ + 4	(9)	0	17 4 +9
(10)	0	14 5 +5	(10)	0	18 1 $\frac{1}{2}$ + 4	(10)	0	15 9 $\frac{1}{2}$ +2
(11)	0	13 2 $\frac{1}{2}$ +9	(11)	0	16 7 $\frac{1}{2}$ +10	(11)	0	14 5 $\frac{1}{2}$ +1

<i>b</i>			<i>c</i>			<i>d</i>		
<i>£</i>	<i>s.</i>	<i>d.</i>	<i>£</i>	<i>s.</i>	<i>d.</i>	<i>£</i>	<i>s.</i>	<i>d.</i>
(1)	2	17 1 $\frac{1}{2}$ + 1	(1)	4	18 5 $\frac{1}{2}$	(1)	4	5 3 $\frac{1}{2}$ +1
(2)	1	18 0 $\frac{1}{2}$ + 2	(2)	3	2 3 $\frac{1}{2}$	(2)	2	16 10 $\frac{1}{2}$ +2
(3)	1	8 6 $\frac{1}{2}$ + 3	(3)	2	6 8 $\frac{1}{2}$ +2	(3)	2	2 7 $\frac{1}{2}$ +1
(4)	1	2 10 + 3	(4)	1	17 4 $\frac{1}{2}$	(4)	1	14 1 $\frac{1}{2}$ +4
(5)	0	19 0 $\frac{1}{2}$ + 5	(5)	1	11 1 $\frac{1}{2}$	(5)	1	8 5 +5
(6)	0	16 3 $\frac{1}{2}$ + 2	(6)	1	6 8 $\frac{1}{2}$ +3	(6)	1	4 4 $\frac{1}{2}$ +6
(7)	0	14 3 $\frac{1}{2}$ + 3	(7)	1	3 4 $\frac{1}{2}$ +2	(7)	1	1 3 $\frac{1}{2}$ +5
(8)	0	12 8 $\frac{1}{2}$ + 2	(8)	1	0 9 +6	(8)	0	18 11 $\frac{1}{2}$ +8
(9)	0	11 5 + 3	(9)	0	18 8 $\frac{1}{2}$	(9)	0	17 0 $\frac{1}{2}$ +9
(10)	0	10 4 $\frac{1}{2}$ + 5	(10)	0	16 11 $\frac{1}{2}$ +5	(10)	0	15 6 +5
(11)	0	9 6 +11	(11)	0	15 6 $\frac{1}{2}$ +6	(11)	0	14 2 $\frac{1}{2}$ +5

Ex. 44 (Page 73).

A			B			C								
	£	s.	d.		£	s.	d.		£	s.	d.			
(1)	a	1	16	8	+	8	(1)	a	1	5	8 $\frac{1}{2}$ + 11			
	b	1	14	2 $\frac{1}{2}$ + 3				b	1	5	2 $\frac{1}{2}$ + 10			
	c	1	12	1	+	8		c	1	3	6 $\frac{1}{2}$ + 26			
(2)	a	1	13	4	+	6	(2)	a	1	3	2 $\frac{1}{2}$ + 8			
	b	1	10	0	+	6		b	1	2	9 $\frac{3}{4}$ + 47			
	c	1	8	6 $\frac{1}{2}$ + 15				c	1	2	1 $\frac{1}{2}$ + 35			
(3)	a	1	6	10 $\frac{3}{4}$ + 7	(3)	a	1	4	5 $\frac{1}{2}$ + 38	(3)	a	1	2	9 $\frac{1}{2}$ + 17
	b	1	4	7 $\frac{1}{2}$ + 17		b	1	3	11 + 34		b	1	2	1 $\frac{1}{2}$ + 61
	c	1	3	8 + 9		c	1	2	5 + 46		c	1	0	8 $\frac{1}{2}$ + 59
(4)	a	1	7	11 $\frac{1}{2}$ + 16	(4)	a	1	7	3 $\frac{3}{4}$ + 18	(4)	a	1	0	2 $\frac{1}{2}$ + 4
	b	1	6	11 $\frac{1}{2}$ + 19		b	1	6	9 $\frac{1}{2}$ + 7		b	0	19	11 $\frac{1}{2}$ + 5
	c	1	5	1 $\frac{1}{2}$ + 13		c	1	4	9 $\frac{1}{2}$ + 51		c	0	19	3 + 68

D				E-a				b			
	£	s.	d.		£	s.	d.		£	s.	d.
(1)	a	0	15	10	+	28	(1)	16	6	6 $\frac{1}{2}$	+18
	b	0	15	5 $\frac{1}{2}$	+	38	(2)	9	17	6 $\frac{1}{2}$	+78
	c	0	14	6	+	92	(3)	9	10	5 $\frac{1}{2}$	+27
(2)	a	0	16	11 $\frac{1}{2}$	+	14	(4)	7	8	1 $\frac{1}{2}$	+51
	b	0	16	9 $\frac{1}{2}$	+	1	(5)	7	5	5 $\frac{1}{2}$	+19
	c	0	15	6 $\frac{1}{2}$	+	41	(6)	6	1	2 $\frac{1}{2}$	+63
(3)	a	0	15	11	+	51					
	b	0	14	7	+	91					
	c	0	14	5 $\frac{1}{2}$	+	117					
(4)	a	0	15	7 $\frac{1}{2}$	+	19					
	b	0	14	4	+	74					
	c	0	13	1 $\frac{1}{2}$	+	26					

Ex. 45 (Pages 73-75).

A				B				C						
	£	s.	d.		£	s.	d.		£	s.	d.			
(1)	a	16	2	4 + 6	(1)	a	12	5	4 $\frac{1}{2}$ + 39	(1)	a	10	4	0 $\frac{1}{2}$ + 4
	b	12	6	5 $\frac{1}{2}$ + 15		b	11	9	4 $\frac{1}{2}$ + 38		b	10	1	0 $\frac{1}{2}$ + 2
	c	11	0	6 $\frac{1}{2}$ + 8		c	11	4	5 $\frac{1}{2}$ + 25		c	9	18	1 $\frac{1}{2}$ + 12
(2)	a	5	4	4 + 19	(2)	a	2	11	3 $\frac{1}{2}$ + 2	(2)	a	11	2	9 $\frac{1}{2}$ + 27
	b	4	12	3 $\frac{1}{2}$ + 23		b	2	10	3 $\frac{1}{2}$ + 36		b	10	16	8 $\frac{1}{2}$ + 28
	c	4	2	9 + 15		c	2	9	4 $\frac{1}{2}$ + 7		c	10	13	9 + 61
(3)	a	10	0	4 $\frac{1}{2}$ + 25	(3)	a	7	0	4 $\frac{1}{2}$ + 34	(3)	a	10	13	7 + 16
	b	9	2	8 $\frac{1}{2}$ + 6		b	6	17	11 $\frac{1}{2}$ + 25		b	10	10	9 $\frac{1}{2}$ + 24
	c	8	7	10 $\frac{1}{2}$ + 6		c	6	15	7 $\frac{1}{2}$ + 12		c	10	5	4 $\frac{1}{2}$ + 70
(4)	a	16	0	4 $\frac{1}{2}$ + 11	(4)	a	12	12	8 $\frac{1}{2}$ + 55	(4)	a	7	9	4 + 19
	b	15	12	2 + 37		b	12	8	8 + 14		b	7	3	10 $\frac{1}{2}$ + 81
	c	14	16	11 $\frac{1}{2}$ + 40		c	11	17	2 $\frac{1}{2}$ + 21		c	7	2	1 $\frac{1}{2}$ + 65

D				E				F						
	£	s.	d.		£	s.	d.		£	s.	d.			
(1)	a	5	8	1 $\frac{1}{2}$ + 63	(1)	9	14	2 $\frac{1}{2}$ + 48	(1)	24	2	2 $\frac{1}{2}$ + 58		
	b	5	6	10 $\frac{1}{2}$ + 32		9	8	8 $\frac{1}{2}$ + 66	(2)	23	15	0 $\frac{1}{2}$ + 71		
	c	5	5	8 + 34	(2)	19	7	0 + 72	(2)	36	10	2 $\frac{1}{2}$ + 36		
(2)	a	7	17	5 + 43		18	19	10 $\frac{1}{2}$ + 89		36	4	11 + 38		
	b	7	13	11 $\frac{1}{2}$ + 37	(3)	13	11	3 + 87	(3)	21	2	9 $\frac{1}{2}$ + 107		
	c	7	12	3 $\frac{1}{2}$ + 7		12	5	2 $\frac{1}{2}$ + 97		20	16	10 $\frac{1}{2}$ + 131		
(3)	a	9	11	4 $\frac{1}{2}$ + 8	(4)	14	5	0 + 29	(4)	8	10	4 + 23		
	b	9	9	4 + 34		14	0	7 + 17		8	5	9 + 99		
	c	9	7	4 + 66										
(4)	a	1	0	7 $\frac{1}{2}$ + 1										
	b	1	0	4 $\frac{1}{2}$ + 89										
	c	0	19	9 $\frac{1}{2}$ + 81										

G				H				I			
£ s. d.				£ s. d.				£ s. d.			
(1)	2	13	8 + 386	(1)	6	18	0 + 480	(1)	7	7	3½ + 2,075
(2)	11	11	4½ + 283	(2)	3	4	9½ + 185	(2)	11	4	4½ + 3,901
(3)	2	16	2½ + 343	(3)	7	14	0½ + 2,434	(3)	8	10	8½ + 6,825
(4)	5	10	0 + 480	(4)	2	0	10 + 6,640	(4)	1	2	10½ + 1,250

J

£ s. d.			
(1)	12	8	4 + 164
(2)	8	16	7½ + 9,018
(3)	1	4	9½ + 2,439
(4)	2	10	6½ + 9,346

K—(1)

£ s. d.			
(1)	51	17	4½ + 3,741
(2)	46	15	8½ + 1,654
(3)	35	8	1¾ + 511
(4)	6	3	4¾ + 454

(2)

£ s. d.			
(1)	25	15	5½ + 4,148
(2)	24	5	3½ + 3,544
(3)	32	1	5½ + 3,769
(4)	2	10	2 + 27,872

(3)

£ s. d.			
(1)	194	16	4½ + 1,976
(2)	144	14	1½ + 566
(3)	68	18	3 + 3,626
(4)	6	1	11½ + 22,836

(4)

£ s. d.			
(1)	35	6	3 + 5,327
(2)	29	10	4¾ + 2,146
(3)	26	1	8 + 4,687
(4)	4	8	1¾ + 14,268

(5)

£ s. d.			
(1)	458	5	5½ + 4,469
(2)	520	6	4 + 4,813
(3)	354	18	6½ + 6,664
(4)	40	2	5 + 21,833

(6)

£ s. d.			
(1)	639	4	5½ + 4,214
(2)	569	12	2¾ + 8,640
(3)	523	19	8½ + 8,121
(4)	55	16	1¾ + 84

FRACTIONAL MULTIPLICATION.

Ex. 46 (Page 75).

A				B			
	£	s.	d.		£	s.	d.
(1)	a	10	6	2	(1)	a	125 17 7 $\frac{1}{2}$
	b	6	17	5 $\frac{1}{2}$ + $\frac{1}{8}$		b	234 19 6 $\frac{1}{2}$ + $\frac{1}{8}$
	c	5	3	1		c	285 6 6 $\frac{1}{2}$ + $\frac{1}{8}$
(2)	a	21	10	2	(2)	a	410 11 1 $\frac{1}{2}$ + $\frac{1}{8}$
	b	8	19	2 $\frac{3}{4}$ + $\frac{1}{8}$		b	672 15 2 $\frac{3}{4}$ + $\frac{1}{8}$
	c	30	14	6 $\frac{1}{2}$ + $\frac{1}{8}$		c	818 8 7 $\frac{1}{2}$ + $\frac{1}{8}$
(3)	a	55	9	2 $\frac{3}{4}$ + $\frac{3}{8}$	(3)	a	2,576 7 0 + $\frac{1}{16}$
	b	39	8	9 $\frac{1}{2}$ + $\frac{3}{8}$		b	3,111 12 5 $\frac{1}{2}$ + $\frac{1}{16}$
	c	79	17	3 $\frac{3}{4}$		c	3,671 3 10 + $\frac{1}{16}$
(4)	a	44	4	10 $\frac{1}{2}$ + $\frac{1}{16}$	(4)	a	4,792 16 3 $\frac{1}{2}$ + $\frac{1}{16}$
	b	55	15	4 + $\frac{1}{16}$		b	7,132 0 8 $\frac{1}{2}$ + $\frac{1}{16}$
	c	56	3	1 $\frac{1}{2}$ + $\frac{1}{16}$		c	12,557 13 7 $\frac{1}{2}$ + $\frac{1}{16}$
(5)	a	67	10	1 $\frac{3}{4}$ + $\frac{1}{8}$	(5)	a	19,228 17 0 $\frac{1}{2}$ + $\frac{1}{16}$
	b	24	15	8 $\frac{1}{2}$		b	15,067 14 4 $\frac{1}{2}$ + $\frac{1}{16}$
	c	69	10	11 $\frac{1}{2}$ + $\frac{1}{16}$		c	13,627 1 4 + $\frac{1}{16}$
(6)	a	85	5	10 $\frac{1}{2}$ + $\frac{1}{16}$	(6)	a	45,770 9 8 $\frac{1}{2}$ + $\frac{1}{16}$
	b	49	8	0 $\frac{1}{2}$ + $\frac{1}{16}$		b	26,732 19 8 $\frac{1}{2}$ + $\frac{1}{16}$
	c	54	12	11 + $\frac{1}{16}$		c	48,557 8 6 $\frac{1}{2}$ + $\frac{1}{16}$

FRACTIONAL DIVISION.

Ex. 47 (Page 75).

A				B			
	£	s.	d.		£	s.	d.
(1)	a	33	9	0	(1)	a	56 10 11 $\frac{1}{2}$ + $\frac{1}{8}$
	b	25	1	9		b	46 5 4 + $\frac{1}{16}$
	c	66	18	0		c	31 16 2 + $\frac{1}{8}$
(2)	a	25	4	11 $\frac{1}{2}$ + $\frac{1}{8}$	(2)	a	30 4 0 + $\frac{1}{8}$
	b	47	6	9 $\frac{1}{2}$		b	18 5 8 + $\frac{1}{8}$
	c	22	14	5 $\frac{1}{2}$ + $\frac{3}{8}$		c	10 17 9 $\frac{1}{2}$ + $\frac{1}{8}$
(3)	a	23	18	8 $\frac{3}{4}$ + $\frac{1}{8}$	(3)	a	9 17 2 $\frac{1}{2}$ + $\frac{1}{8}$
	b	54	14	3 $\frac{1}{2}$ + $\frac{1}{8}$		b	7 18 8 $\frac{1}{2}$ + $\frac{1}{8}$
	c	32	16	6 $\frac{3}{4}$ + $\frac{1}{8}$		c	7 5 7 + $\frac{1}{16}$
(4)	a	31	14	5 $\frac{1}{2}$ + $\frac{1}{8}$	(4)	a	8 18 3 + $\frac{1}{8}$
	b	31	4	6 $\frac{1}{2}$ + $\frac{1}{8}$		b	7 17 7 $\frac{1}{2}$ + $\frac{1}{16}$
	c	39	13	0 $\frac{3}{4}$ + $\frac{1}{8}$		c	5 14 11 + $\frac{1}{16}$
(5)	a	34	0	11 + $\frac{1}{8}$	(5)	a	8 10 2 $\frac{3}{4}$ + $\frac{1}{16}$
	b	33	14	1 $\frac{1}{2}$ + $\frac{3}{8}$		b	7 16 11 $\frac{1}{2}$ + $\frac{1}{16}$
	c	52	10	6 $\frac{1}{2}$ + $\frac{3}{8}$		c	6 14 2 $\frac{3}{4}$ + $\frac{1}{16}$
(6)	a	71	7	2 + $\frac{1}{16}$	(6)	a	8 0 1 + $\frac{1}{16}$
	b	49	14	11 $\frac{1}{2}$ + $\frac{1}{16}$		b	7 6 5 $\frac{1}{2}$ + $\frac{1}{16}$
	c	108	5	0 $\frac{1}{2}$ + $\frac{1}{16}$		c	8 16 11 + $\frac{1}{16}$

- | | | |
|---|---|---|
| <p style="text-align: center;">J</p> <p>(1) £3,009 18s. 10½d.
 (2) £11 15s. 10d.
 (3) 38 persons
 (4) A's £838; B's £167 12s.</p> | <p style="text-align: center;">K</p> <p>(1) £42,387 8s. 0½d.
 (2) 14s.
 (3) £1 5s.
 (4) £71 3s. 9d.</p> | <p style="text-align: center;">L</p> <p>(1) £2 7s. 7½d.
 (2) 1,223 1s. 10½d.
 (3) 4,527 acres
 (4) £37 10s.</p> |
| <p style="text-align: center;">M</p> <p>(1) £225 8s. 6d.
 (2) 2s. 3½d. per dozen
 (3) £114 18s. 2½d.
 (4) A's £5 17s. 6½d.
 B's £11 15s. 0½d.
 C's £17 12s. 6½d.</p> | <p style="text-align: center;">N</p> <p>(1) £250 2s. 1d.
 (2) 235
 (3) £463,463
 (4) Son £238 16s.
 Each daughter £159 4s.</p> | <p style="text-align: center;">O</p> <p>(1) £8 4s. 11½d.
 (2) £298 0s. 0½d.
 (3) £11,875
 (4) £8 14s. 6½d. ¾q.</p> |
| <p style="text-align: center;">P</p> <p>(1) £80 18s. 10½d.
 (2) £2
 (3) 6s. 2½d. ¾q.
 (4) 13 times</p> | | |

REDUCTION—(WEIGHTS AND MEASURES).

Ex. 50 (Pages 81, 82).

- | | | |
|---|--|---|
| <p style="text-align: center;">A</p> <p>(1) 320 drams
 (2) 688 drams
 (3) 512 drams
 (4) 8,840 drams
 (5) 8,704 drams
 (6) 17,920 drams</p> | <p style="text-align: center;">B</p> <p>(1) 4,480 ounces
 (2) 100,352 drams
 (3) 2,016 lbs.
 (4) 100,352 ounces
 (5) 1,060,864 drams
 (6) 7,520 qrs.</p> | <p style="text-align: center;">C</p> <p>(1) 96,320 lbs.
 (2) 2,042,880 ounces
 (3) 12,800 stones
 (4) 22,864,160 drams
 (5) 2,007,040 half-oz.
 (6) 87,847,040 drams</p> |
| <p style="text-align: center;">D</p> <p>(1) 3 oz. 6 drams
 (2) 4 oz. 6 drams
 (3) 12 oz. 6 drams
 (4) 1 lb. 3 oz. 10 drams
 (5) 2 lbs. 3 oz.
 (6) 3 lbs. 2 oz. 9 drams</p> | <p style="text-align: center;">E</p> <p>(1) 2 qrs. 22 lbs. 10 oz.
 (2) 1 cwt. 2 qrs. 26 lbs. 3 oz.
 (3) 4 cwts. 2 qrs. 4 lbs.
 (4) 2 tons 12 cwts. 1 qr. 18 lbs.
 (5) 4 cwts. 2 qrs. 8 lbs. 13 oz.
 (6) 1 qr. 9 lbs. 5 oz. 14 drams</p> | |
| <p style="text-align: center;">F</p> <p>(1) 101 cwts. 1 stone
 (2) 26 tons 6 cwts. 1 stone
 (3) 622 stones
 (4) 3 cwts. 1 qr. 0 lbs. 9 oz.
 (5) 1 qr. 7 lbs. 3 oz. 1 dram
 (6) 1 qr. 9 lbs. 13 oz. 7 drams</p> | <p style="text-align: center;">G</p> <p>(1) 243,880 lbs.
 (2) 46 tons 19 cwts. 1 qr. 9 lbs. 10 oz.
 (3) 7,348,944 ounces
 (4) 6,593,632 ounces
 (5) 147,336,432 drams
 (6) 172,519,405 drams</p> | |

H			I			J		
(1)	144	inches	(1)	11,220	feet	(1)	660,000	feet
(2)	348	inches	(2)	229,680	inches	(2)	12,672,000	inches
(3)	792	inches	(3)	285,120	inches	(3)	997,920	yards
(4)	1,080	inches	(4)	35,200	yards	(4)	3,579,840	feet
(5)	99	feet	(5)	274,560	feet	(5)	8,030,880	feet
(6)	3,564	inches	(6)	1,837,440	inches	(6)	115,188,480	inches

K			L		
(1)	1	ft. 6 in.	(1)	11	po. $1\frac{1}{2}$ yds. 1 ft.
(2)	3	ft. 3 in.	(2)	1	fur. 32 po. 4 yds.
(3)	2	yds. 1 ft. 3 in.	(3)	1	mile 4 fur. 30 po. 1 yd.
(4)	2	yds. 1 ft. 6 in.	(4)	4	fur. 7 po. $4\frac{1}{2}$ yds.
(5)	2	yds. 1 ft. 11 in.	(5)	1	fur. 1 po. $2\frac{1}{2}$ yds. 1 ft. 10 in.
(6)	2	yds. 2 ft. 2 in.	(6)	1	fur. 4 po. 4 yds. 1 ft.

M			N		
(1)	101	po. $4\frac{1}{2}$ yds.	(1)	6,781	$\frac{1}{2}$ yards
(2)	5,272	po. 5 yds. 2 ft.	(2)	1,739,946	inches
(3)	11	fur. 4 po. 4 yds. 0 ft. 8 in.	(3)	4,331,644	inches
(4)	1	mile 2 fur. 37 po. $1\frac{1}{2}$ yds. 1 ft. 5 in.	(4)	1,962,204	inches
(5)	5	leag. 2 miles 0 fur. 31 po. $3\frac{1}{2}$ yds. 2 ft.	(5)	4,884,470	inches
(6)	1	mile 4 fur. 18 po. 0 yds. 2 ft. 2 in.	(6)	16,544,871	inches

O			P			Q		
(1)	36	inches	(1)	324	inches	(1)	200	nails
(2)	198	inches	(2)	240	nails	(2)	456	$\frac{1}{2}$ inches
(3)	180	inches	(3)	680	nails	(3)	50	French ells
(4)	2,052	inches	(4)	1,944	inches	(4)	60	English ells
(5)	3,456	inches	(5)	30	yards	(5)	110	inches
(6)	3,564	inches	(6)	62	$\frac{1}{2}$ yards	(6)	15	French ells

R			S		
(1)	11,520	square inches	(1)	15,838,416	square inches
(2)	21,456	square inches	(2)	41,022	square feet
(3)	207,360	square inches	(3)	4,662,900	square inches
(4)	285,120	square inches	(4)	533,883	square feet
(5)	32,670	square feet	(5)	95,186,340	square inches
(6)	7,840,800	square inches	(6)	136,461,160	square inches

T.			U		
(1)	244,593,569	sq. in.	(1)	17	sq. ft. 112 sq. in.
(2)	880,986	sq. po.	(2)	7	sq. yds. 6 sq. ft. 92 sq. in.
(3)	356,331,698	sq. ft.	(3)	9	sq. yds. 6 sq. ft. 112 sq. in.
(4)	61,952,000	sq. yds.	(4)	110	sq. po. $28\frac{1}{2}$ sq. yds. 5 sq. ft.
(5)	168,174,003	$\frac{3}{4}$ sq. ft.	(5)	5	ro. 32 sq. po. 10 sq. yds. 2 sq. ft.
(6)	136,435,837,536	sq. in.	(6)	2	sq. po. $0\frac{1}{2}$ sq. yds. 7 sq. ft. 6 sq. in.

V

- (1) 3 sq. po. $8\frac{1}{2}$ sq. yds. 2 sq. ft. 62 sq. in.
- (2) 6 acres 1 ro. 29 sq. po. $12\frac{1}{2}$ sq. yds. 8 sq. ft.
- (3) 12 sq. po. 22 sq. yds. 7 sq. ft. 51 sq. in.
- (4) 15 acres 2 ro. 13 sq. po. $2\frac{1}{2}$ sq. yds. 6 sq. ft.
- (5) 20 sq. po. 17 sq. yds. 2 sq. ft. 126 sq. in.
- (6) 23 sq. po. $5\frac{1}{2}$ sq. yds. 3 sq. ft. 80 sq. in.

W

- (1) 43,200 cub. in.
- (2) 62,208 cub. in.
- (3) 2,379,456 cub. in.
- (4) 3,825,792 cub. in.
- (5) 4,432,320 cub. in.
- (6) 4,152,384 cub. in.

X

- (1) 1 cub. ft. 812 cub. in.
- (2) 18 cub. ft. 982 cub. in.
- (3) 2,084 cub. yds. 6 cub. ft.
- (4) 1 cub. yd. 9 cub. ft. 879 cub. in.
- (5) 1 cub. yd. 23 cub. ft. 866 cub. in.
- (6) 2 cub. yds. 3 cub. ft. 269 cub. in.

Y

- (1) 44,401 cub. in.
- (2) 592,210 cub. in.
- (3) 3,872,379 cub. in.
- (4) 3,687,553 cub. in.
- (5) 27 cub. yds. 3 cub. ft. 393 cub. in.
- (6) 61 cub. yds. 4 cub. ft. 726 cub. in.

Ex. 51 (Pages 83-85).

A

- (1) 4,800 sec.
- (2) 205,200 sec.
- (3) 4,233,600 sec.
- (4) 7,171,200 sec.
- (5) 36,288,000 sec.
- (6) 186,278,400 sec.

B

- (1) 91,929,600 sec.
- (2) 624 wks.
- (3) 19,345 dys.
- (4) 411,720 hrs.
- (5) 40,471,200 min.
- (6) 2,806,704,000 sec.

C

- (1) 36,500 days
- (2) 175,200 hrs.
- (3) 128,217,600 sec.
- (4) 26,280,000 hrs.
- (5) 5,797,440 min.
- (6) 379,468,800 sec.

D

- (1) 5 min. 5 sec.
- (2) 33 min. 34 sec.
- (3) 54 min. 28 sec.
- (4) 1 hr. 15 min. 29 sec.
- (5) 1 hr. 34 min. 38 sec.
- (6) 2 hr. 18 min. 10 sec.

E

- (1) 3 hrs. 21 min. 46 sec.
- (2) 26 dys. 13 hrs. 55 min.
- (3) 5 wks. 1 dy. 17 hrs. 9 min.
- (4) 3 wks. 6 dys. 10 hrs. 45 min.
- (5) 1 mo. 2 wks. 1 dy. 22 hrs. 35 min.
- (6) 2 mo. 0 wks. 2 dys. 3 hrs. 59 min.

F

- (1) 7 mo. 0 wks. 6 dys. 10 hrs. 3 min.
- (2) 6,853 yrs. 9 wks.
- (3) 94 lp. yrs. 29 dys. 3 hrs.
- (4) 25 cen. 53 yrs. 170 dys.
- (5) 1 cen. 9 yrs. 56 dys. 21 hrs.
- (6) 189 cen. 93 yrs. 42 wks.

G

- (1) 33 cen. 82 yrs. 137 dys.
- (2) 708,306 hrs.
- (3) 98,897 dys.
- (4) 31,622,400 secs.
- (5) 3,226 yrs. 302 dys. 10 hrs.
- (6) 72 yrs. 217 dys. 10 hrs.

- | | | | | | |
|----------|-------------|----------|-------------|----------|-----------------|
| H | | I | | J | |
| (1) | 72 gills | (1) | 2,976 gills | (1) | 55,296 gills |
| (2) | 140 gills | (2) | 576 pints | (2) | 67,840 quarts |
| (3) | 136 gills | (3) | 4,800 gills | (3) | 182,272 gills |
| (4) | 344 gills | (4) | 896 pints | (4) | 171,520 pints |
| (5) | 416 gills | (5) | 5,120 gills | (5) | 849,920 gills |
| (6) | 1,600 gills | (6) | 9,216 pints | (6) | 1,013,760 gills |
-
- | | | | |
|----------|-----------------------|----------|---|
| K | | L | |
| (1) | 95 pts. | (1) | 37 gals. 2 qts. 1 pt. 3 gills |
| (2) | 59 qts. 3 gills | (2) | 146 pks. 1 gal. 1 qt. |
| (3) | 63 qts. 1 pt. | (3) | 47 bush. 1 pk. 2 qts. |
| (4) | 100 gals. | (4) | 24 bush. 1 pk. 1 gill. |
| (5) | 27 gals. 1 gill | (5) | 3 qrs. 6 bush. 1 pk. 2 qts. 1 pt. 2 gills |
| (6) | 80 gals. 2 qts. 1 pt. | (6) | 3 lds. 5 bush. 1 gal. 3 qts. |
-
- M**
- (1) 7 lds. 2 qrs. 4 bush. 1 pt.
 - (2) 89 bush. 3 pks. 1 gal. 2 qts. 2 gills
 - (3) 1,893 pks. 1 pt.
 - (4) 4 lds. 3 qrs. 2 pks. 1 gal. 3 qts. 1 pt. 2 gills
 - (5) 40 lds. 4 qrs. 6 bush. 2 pks. 1 gal. 2 qts.
 - (6) 8 lds. 2 qrs. 4 bush. 2 pks. 1 gal. 1 gill
-
- | | | | |
|----------|--------------------------------------|----------|---------------|
| N | | O | |
| (1) | 295 pints | (1) | 350 gallons |
| (2) | 396 pks. 1 gal. 1 qt. 2 gills | (2) | 1,134 gallons |
| (3) | 20,936 pts. | (3) | 9,912 quarts |
| (4) | 96 lds. 2 qrs. 2 bush. | (4) | 55,776 pints |
| (5) | 102,616 gills | (5) | 137,088 gills |
| (6) | 252 lds. 4 qrs. 1 bush. 2 pks. 1 pt. | (6) | 175,392 gills |
-
- | | | | |
|----------|----------------------------|----------|--------------|
| P | | Q | |
| (1) | 92,232 quarts | (1) | 3,600 pints |
| (2) | 397,152 pints | (2) | 6,912 gills |
| (3) | 2 pipes 102 gals. 1 qt. | (3) | 11,520 gills |
| (4) | 3 tuns 218 gals. 3 qts. | (4) | 6,336 quarts |
| (5) | 1 tun 8 gal. 1 pt. 3 gills | (5) | 21,600 pints |
| (6) | 19 hhds. 32 gals. 2 qts | (6) | 5,184 quarts |
-
- | | | | |
|----------|---------------------------------------|----------|--------------|
| R | | S | |
| (1) | 456 kil. 3 gals. 2 qts. | (1) | 1,008 grs. |
| (2) | 108 hhds. 46 gals. 1 pt. | (2) | 17,760 grs. |
| (3) | 46 brls. 8 gals. 3 qts. 1 pt. 2 gills | (3) | 25,440 grs. |
| (4) | 586 butts 41 gals. | (4) | 14,400 dwts. |
| (5) | 250 firkins 1 qt. 1 pt. 2 gills | (5) | 432,000 grs. |
| (6) | 599 kil. 16 gals. 2 qts. | (6) | 512,640 grs. |

T

- (1) 11 dwts. 3 grs.
- (2) 6 oz. 10 dwts. 20 grs.
- (3) 8 oz. 15 dwts. 8 grs.
- (4) 11 lb. 2 oz.
- (5) 10 oz. 10 dwts. 18 grs.
- (6) 1 lb. 1 oz. 3 dwts. 17 grs.

U

- (1) 3,080 dwts.
- (2) 75,336 grs.
- (3) 299,542 grs.
- (4) 4 lb. 11 oz. 1 dwt. 1 gr.
- (5) 8 lb. 6 oz. 13 dwts. 14 grs.
- (6) 8 lb. 8 oz. 11 dwts. 5 grs.

V

- (1) 200 grs.
- (2) 780 grs.
- (3) 200 drs.
- (4) 19,200 grs.
- (5) 103,680 grs.
- (6) 155,520 grs.

W

- (1) 16 scr. 5 grs.
- (2) 16 drs. 2 scr. 3 grs.
- (3) 4 oz. 5 drs.
- (4) 6 oz. 2 drs. 2 scr. 14 grs.
- (5) 5 lbs. 7 oz. 5 drs. 1 scr.
- (6) 10 oz. 7 drs. 2 scr. 8 grs.

X

- (1) 63,400 grs.
- (2) 3,765 scr.
- (3) 2 lb. 2 oz. 6 drs. 1 scr. 10 grs.
- (4) 86,419 grs.
- (5) 112 lb. 10 oz. 4 drs.
- (6) 155,560 grs.

Y

- (1) 72 sheets
- (2) 408 sheets
- (3) 9,600 sheets
- (4) 720 sheets
- (5) 2,280 sheets
- (6) 205 quires

Z

- (1) 106 quires 2 sheets
- (2) 14 reams 12 quires 21 sheets
- (3) 14,324 sheets
- (4) 27,214 sheets
- (5) 53,595 quires 17 sheets
- (6) 43,199 sheets

EXAMINATION IN REDUCTION—(WEIGHTS AND MEASURES).

Ex. 52 (Pages 85-87).

A

- (1) 449,120 lb.
- (2) 144 acr. 27 po. $17\frac{1}{2}$ sq. yds.
- (3) 336 packages
- (4) 210 French ells

B

- (1) 7,968 tons. 8 cwt. 1 qr. 3 lb.
- (2) 86,394 sq. yds.
- (3) 4,619,998 cub. in.
- (4) 86 lbs. 9 oz. 13 dwts. 8 grs.

C

- (1) 6,600 ft.
- (2) 86,400 seconds
- (3) 59 miles 176 yards
- (4) 4 cwt. 21 lb. 9 oz. 8 drs.

D

- (1) 5,040 sheets
- (2) 14 dys. 1 hr. 4 min. 19 secs.
- (3) 7 sq. yds. 6 sq. ft. 64 sq. in.
- (4) 157,680,000 seconds

E

- (1) 13 tons 13 cwt. 0 qrs. 2 lb.
 (2) 6,146,028 sq. in.
 (3) 2 mls. 7 fur. 1 yd. 1 ft. 6 in.
 (4) 31 parcels

F

- (1) 22,524 oz.
 (2) 2 acrs. 10 per. $17\frac{1}{2}$ sq. yds.
 (3) 6 wks. 4 dys. 7 hrs. 6 min. 40 ^{so}
 (4) 2 tons 13 cwt. 2 qr. 18 lbs.

G

- (1) 2,004,656 sq. in.
 (2) 18 tons 4 cwt. 7 lb. 3 oz.
 (3) 13,203,960 in.
 (4) $\begin{cases} 144 \times 7,000 = 1,008,000 \\ 175 \times 5,760 = 1,008,000 \end{cases}$

H

- (1) 1,008
 (2) 2 tons 2 cwt. 2 qrs. 15 lb. 9 oz.
 (3) 4 mo. 2 hrs. 23 min. 30 sec.
 (4) 180

I

- (1) 280,689 $\frac{3}{4}$ sq. yds.
 (2) 152 tons 10 cwt. 8 lb.
 (3) 794,153 cub. in.
 (4) 1,760 packets

J

- (1) 77,777 oz.
 (2) 5 dys. 20 hrs. 28 min.
 (3) 743,681 oz.
 (4) 44,640 min.

K

- (1) 2,557 tons 2 cwt. 1 qr. 17 lb. 5 oz.
 (2) 24,192 half-pints
 (3) 1,548,800 square yards
 (4) 54 spoons

L

- (1) 1 yr. 155 dys. 20 hrs. 12 m. 4 sec.
 (2) 13 m. 5 fur. 4 po. 5 yds. 1 ft. 11 in.
 (3) 527,040 min.
 (4) 15 cwt. 7 lb. 8 oz.

M

- (1) 191,112 in.
 (2) 246 acrs. 2 ro. 32 po.
 (3) 119 lbs. 8 oz. 9 dwts. 4 grs.
 (4) 35 plots.

ADDITION—(WEIGHTS AND MEASURES).

Ex. 53 (Pages 88, 89).

A

- (1) 197 tons 17 cwt.
 (2) 85 cwt. 1 qr. 9 lb.
 (3) 108 lbs. 4 oz. 3 drs.
 (4) 222 tons 12 cwt. 11 lb.

B

- (1) 252 lbs. 1 oz. 3 dwts.
 (2) 11 oz. 8 dwts. 4 grs.
 (3) 12 oz. 5 drs. 1 scr.
 (4) 75 dys. 1 hr. 2 min.

C

- (1) 113 wks. 1 dy. 1 hr.
 (2) 28 yrs. 346 dys. 6 hrs.
 (3) 16 yrs. 11 mo. 2 wks.
 (4) 23 yrs. 21 wks. 6 dys.

D

- (1) 9 qrs. 1 nl. $0\frac{1}{2}$ in.
 (2) 251 yds. 2 qrs. 2 nls.
 (3) 39 English ells
 (4) 102 yds. 1 ft. 9 in.

E

- (1) 36 fur. 9 po. 3 yds.
 (2) 175 miles 3 fur. 10 po.
 (3) 30 leag. 1 mile
 (4) 26 miles 1,630 yds.

F

- (1) 29 po. 3 yds. 1 in.
 (2) 141 sq. yds. 1 sq. ft. 17 sq. in.
 (3) 181 sq. yds. 53 sq. in.
 (4) 19 ro. 26 po. $11\frac{1}{2}$ sq. yds.

G

- (1) 173 ac. 3 ro. 31 po.
 (2) 13 ac. 227 sq. yds. 3 sq. ft.
 (3) 14 sq. mls. 412 ac. 2 ro.
 (4) 25 ro. 30 po. $25\frac{3}{4}$ sq. yds.

I

- (1) 19 bush. 1 pk.
 (2) 27 lds. 3 qrs. 3 bush.
 (3) 28 punc. 42 gals. 1 qt.
 (4) 23 tuns 226 gals. 3 qts.

H

- (1) 18 cu. yds. 13 cu. ft. 802 cu. in.
 (2) 29 cu. yds. 25 cu. ft. 415 cu. in.
 (3) 14 qts. 1 pt.
 (4) 18 gals. 3 qts. 1 pt.

J

- (1) 27 kld. 2 gals. 1 qt.
 (2) 23 brls. 12 gal. 1 qt.
 (3) 40 rms. 12 qrs.
 (4) 138 rms. 9 qrs. 3 shts.

SUBTRACTION—(WEIGHTS AND MEASURES).

Ex. 54 (Pages 90, 91).

A

- (1) 19 tons 18 cwt. 1 qr.
 (2) 6 cwt. 2 qrs. 23 lb.
 (3) 1 qr. 18 lb.
 (4) 4 lb. 15 drs.

C

- (1) 1 yr. 3 wks.
 (2) 50 wks. 4 dys.
 (3) 201 dys. 5 hrs.
 (4) 10 hrs. 23 min. 3 secs.

E

- (1) 1 yd. 1 ft.
 (2) 11 po. $0\frac{1}{4}$ yd. 2 ft.
 (3) 3 fur. 13 po. $0\frac{1}{4}$ yd.
 (4) 4 miles 34 po.

G

- (1) 3 po. $3\frac{3}{4}$ yds. 14 in.
 (2) 3 sq. yds. 102 sq. in.
 (3) 1 sq. yd. $10\frac{1}{4}$ sq. in.
 (4) 39 po. $27\frac{1}{4}$ sq. yds.

I

- (1) 4 cub. yds. 1,721 cub. in.
 (2) 1 cub. yd. 26 cub. ft. 755 cub. in.
 (3) 3 cub. ft. 629 cub. in.
 (4) 22 cub. ft. 1,428 cub. in.

K

- (1) 3 bush.
 (2) 4 lds. 6 bush.
 (3) 4 gals. 2 qts.
 (4) 1 punc. 68 gals. 2 qts.

B

- (1) 4 lb. 18 dwts.
 (2) 3 oz. 10 dwts. 22 grs.
 (3) 7 oz. 6 drs. 2 scr.
 (4) 1 oz. 1 scr.

D

- (1) 305 dys. 23 hrs.
 (2) 2 nls. $0\frac{3}{4}$ in.
 (3) 1 yd. 3 qrs. 1 nl.
 (4) 3 qrs. 1 nl.

F

- (1) 2 miles 6 fur.
 (2) 3 miles 858 yds. 2 ft.
 (3) 10 po. $3\frac{1}{4}$ yds. 1 ft.
 (4) 5 fur. $3\frac{3}{4}$ yds.

H

- (1) 36 po. 24 sq. yds.
 (2) 2 ac. 3 ro. 24 po.
 (3) 4 ac. 3,385 sq. yds.
 (4) 1 sq. mile 518 ac. 3 ro.

J

- (1) 3 gills
 (2) 1 gal. 1 pt.
 (3) 1 gal. 3 qts.
 (4) 1 bush. 3 pks. 1 gal.

L

- (1) 2 pipes 106 gals.
 (2) 4 fir. 3 qts.
 (3) 8 brls. 24 gals. 3 qts.
 (4) 2 cen. 24 yrs. 204 dys.

M

- (1) 7 rms. 14 shts.
 (2) 10 qrs. 10 shts.
 (3) 2 rms. 5 qrs. 4 shts.
 (4) 10 qrs. 23 shts.

N

- (1) 2 tons 4 cwt. 2 qrs. 16 lb. 6 oz.
 (2) 2 cwt. 15 oz. 2 drs.
 (3) 19 cub. yds. 2 cub. ft. 448 cub. in.
 (4) 2 ro. 2 po. $25\frac{1}{2}$ yds. 7 ft.

O

- (1) 3 qrs. 0 nls. $1\frac{1}{2}$ in.
 (2) 2 mls. 1,149 yds. 1 ft.
 (3) 33 gals. 1 qt. 1 pt.
 (4) 1 rm. 12 qrs. 4 shts.

P

- (1) 1 qr. 1 nl. $0\frac{1}{2}$ in.
 (2) 6 cen. 27 yrs. 265 dys.
 (3) 2 lb. 1 oz. 1 dr. 18 grs.
 (4) 1 lb. 1 oz. 20 gr.

MULTIPLICATION—(WEIGHTS AND MEASURES).

Ex. 55 (Page 92).

A

- | | | | |
|-----|----------------------------------|-----|-------------------------------|
| (1) | 29 tons 3 cwt. 1 qr. 1 lb. | (2) | 47 cwt. 3 qrs. 19 lb. 12 oz. |
| (2) | 75 tons 16 cwt. 1 qr. 25 lb. | (3) | 167 cwt. 2 qrs. 27 lb. 2 oz. |
| (3) | 268 tons 5 cwt. 3 qrs. 26 lb. | (4) | 343 cwt. 1 qr. 24 lb. 14 oz. |
| (4) | 1,195 tons 13 cwt. 2 qrs. 13 lb. | | 838 cwt. 2 qrs. 23 lb. 10 oz. |
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- | | | | |
|-----|-------------------------------|-----|--------------------------------|
| (1) | 47 cwt. 69 lb. 14 oz. 11 drs. | (2) | 21 lb. 11 oz. 8 dwt. 16 grs. |
| (2) | 129 cwt. 29 lb. 12 oz. 7 drs. | (3) | 74 lb. 1 oz. 1 dwt. 18 grs. |
| (3) | 353 cwt. 87 lb. 6 oz. 4 drs. | (4) | 128 lb. 11 oz. 13 dwt. 10 grs. |
| (4) | 2,177 cwt. 12 lb. 4 oz. | | 340 lb. 3 oz. 4 dwt. 8 grs. |

B

- | | | | |
|-----|---------------------------------|-----|-------------------------------|
| (1) | 121 lb. 5 oz. 18 dwt. 21 grs. | (2) | 208 lb. 11 oz. 7 drs. 1 scr. |
| (2) | 310 lb. 5 oz. 17 dwt. 3 grs. | (3) | 543 lb. 4 oz. 4 drs. 2 scr. |
| (3) | 782 lb. 11 oz. 12 dwt. 18 grs. | (4) | 898 lb. 8 oz. 1 scr. |
| (4) | 4,049 lb. 10 oz. 2 dwt. 12 grs. | | 8,380 lb. 7 oz. 3 drs. 2 scr. |
-
- | | | | |
|-----|-----------------------------|-----|-------------------------------------|
| (1) | 20 lb. 1 oz. 6 drs. 10 grs. | (2) | 101 lb. 10 oz. 1 scr. 13 grs. |
| (2) | 53 lb. 1 oz. 3 drs. 10 grs. | (3) | 829 lb. 3 oz. 1 dr. 3 grs. |
| (3) | 113 lb. 6 oz. 5 drs. 2 scr. | (4) | 1,236 lb. 7 oz. 3 drs. 15 grs. |
| (4) | 249 lb. 1 oz. 1 dr. 1 scr. | | 7,463 lb. 4 oz. 1 dr. 1 scr. 7 grs. |

C

- | | | | |
|-----|--------------------------------|-----|------------------------------|
| (1) | 171 yrs. 8 mo. 4 dys. | (2) | 42 dys. 7 hrs. 1 m. 20 s. |
| (2) | 929 yrs. 11 mo. 3 dys. | (3) | 179 dys. 17 hrs. 50 m. 40 s. |
| (3) | 1,015 yrs. 9 mo. 5 dys. | (4) | 824 dys. 16 hrs. 56 m. |
| (4) | 3,576 yrs. 7 mo. 2 wks. 4 dys. | | 5,318 dys. 7 hrs. 2 m. 40 s. |

- | | | | |
|-----------------------------------|-----|--------------------------------------|-----|
| (1) 20 yrs. 27 wk. 6 dy. 18 hr. | (3) | (1) 24 yrs. 241 dys. 5 hrs. 40 m. | (4) |
| (2) 150 yrs. 31 wk. 5 dy. 4 hr. | | (2) 456 yrs. 82 dys. 20 hrs. 50 m. | |
| (3) 458 yrs. 35 wk. 1 dy. 10 hr. | | (3) 850 yrs. 292 dys. 15 hrs. 30 m. | |
| (4) 2,957 yrs. 22 wk. 6 dy. 0 hr. | | (4) 7,644 yrs. 323 dys. 4 hrs. 40 m. | |

D

- | | | | |
|---|-----|--|-----|
| (1) 28 yds. 1 qr. 2 nls. | (1) | 28 Eng. ells 4 qrs. 2 nls. 2 in. | (2) |
| (2) 321 yds. 2 qr. 1 nl. $0\frac{3}{4}$ in. | | (2) 162 Eng. ells 1 nl. $1\frac{3}{4}$ in. | |
| (3) 892 yds. 2 qr. $0\frac{3}{4}$ in. | | (3) 217 Eng. ells 1 nl. $1\frac{1}{2}$ in. | |
| (4) 832 yds. 1 qr. 1 nl. $0\frac{3}{4}$ in. | | (4) 830 Eng. ells 3 qrs. 2 nls. $0\frac{1}{2}$ in. | |
-
- | | | | |
|---|-----|--|-----|
| (1) 227 po. $4\frac{1}{2}$ yds. 1 ft. 2 in. | (1) | 22 mls. 1 fur. 9 po. $1\frac{1}{2}$ yds. | (4) |
| (2) 1,760 po. 5 yds. 10 in. | | (2) 90 mls. 3 fur. 27 po. $4\frac{3}{4}$ yds. | |
| (3) 1,947 po. $1\frac{1}{2}$ yds. 2 ft. 4 in. | | (3) 179 mls. 24 po. $5\frac{1}{2}$ yds. | |
| (4) 2,258 po. 2 ft. 10 in. | | (4) 673 mls. 6 fur. 32 po. $0\frac{1}{2}$ yds. | |

E

- | | |
|---|-----|
| (1) 271 leag. 2 miles 6 fur. 16 poles | (1) |
| (2) 1,053 leag. 2 miles 1 fur. 32 poles | |
| (3) 1,614 leag. 1 mile 6 fur. 20 poles | |
| (4) 3,705 leag. 2 fur. 8 po. | |
-
- | | |
|---|-----|
| (1) 156 sq. poles 22 sq. yards 6 sq. feet 80 sq. inches | (4) |
| (2) 455 sq. poles $16\frac{3}{4}$ sq. yards 1 sq. foot 48 sq. inches | |
| (3) 435 sq. poles $28\frac{3}{4}$ sq. yards 3 sq. feet 128 sq. inches | |
| (4) 2,336 sq. poles $16\frac{1}{2}$ sq. yards 8 sq. feet | |
-
- | | |
|--|-----|
| (1) 2,036 acres 3 roods 38 sq. poles $20\frac{1}{2}$ sq. yards | (3) |
| (2) 4,838 acres 3 roods 4 sq. poles 25 sq. yards | |
| (3) 4,990 acres 2 roods 20 sq. poles 23 sq. yards | |
| (4) 30,554 acres 3 roods 20 sq. poles 5 sq. yards | |
-
- | | |
|--|-----|
| (1) 148 cub. yards 648 cub. inches | (4) |
| (2) 178 cub. yards 4 cub. feet 780 cub. inches | |
| (3) 271 cub. yards 9 cub. feet 1,188 cub. inches | |
| (4) 899 cub. yards 1 cub. foot 480 cub. inches | |

F

- | | | | |
|---|-----|---------------------------|-----|
| (1) 893 cu. yds. 21 cu. ft. 1,344 cu. in. | (1) | 246 pks. 1 gal. 2 qts. | (2) |
| (2) 1,132 cu. yds. 4 cu. ft. 320 cu. in. | | (2) 308 pks. 3 qts. 1 pt. | |
| (3) 1,310 cu. yds. 24 cu. ft. 1,280 cu. in. | | (3) 376 pks. | |
| (4) 7,954 cu. yds. 23 cu. ft. 1,248 cu. in. | | (4) 1,339 pks. 1 gal. | |

- | | | | |
|-----|---------------------------------|-----|---------------------------|
| | (3) | | (4) |
| (1) | 845 qrs. 6 bush. 1 pk. 1 gal. | (1) | 2,246 lds. 3 qrs. 1 bush. |
| (2) | 1,416 qrs. 7 bush. 3 pk. 1 gal. | (2) | 3,295 lds. 2 bush. |
| (3) | 2,526 qrs. 3 bush. 1 pk. | (3) | 4,243 lds. 3 qrs. 1 bush. |
| (4) | 5,503 qrs. 1 bush. 1 pk. 1 gal. | (4) | 9,735 lds. 1 qr. 7 bush. |

G

- | | | | |
|-----|-----------------------------------|-----|----------------------------------|
| | (1) | | (2) |
| (1) | 523 punc. 22 gals. 3 qts. 1 pt. | (1) | 418 brls. 21 gals. 1 qt. 1 pt |
| (2) | 734 punc. 78 gals. 1 qt. 1 pt. | (2) | 1,807 brls. 34 gals. 3 qts. 1 pt |
| (3) | 1,222 punc. 78 gals. | (3) | 4,631 brls. 9 gals. |
| (4) | 4,627 punc. 11 gals. 2 qts. 1 pt. | (4) | 4,177 brls. 1 gal. 1 pt. |

- | | | | |
|-----|-----------------------------|-----|----------------------------|
| | (3) | | (4) |
| (1) | 395 rms. 13 qrs. 12 shts. | (1) | 844 rms. 17 qrs. 7 shts. |
| (2) | 721 rms. 18 qrs. 16 shts. | (2) | 1,533 rms. 15 qrs. 2 shts. |
| (3) | 1,659 rms. 1 qr. 4 shts. | (3) | 3,990 rms. 7 qrs. 5 shts. |
| (4) | 5,851 rms. 16 qrs. 12 shts. | (4) | 7,720 rms. 15 qrs. 6 shts. |

H

- | | | | |
|-----|----------------------------------|-----|----------------------------------|
| | (1) | | (2) |
| (1) | 9,805 tons 14 cwt. 1 qr. 4 lb. | (1) | 9,271 lb. 8 oz. 8 dwt. 8 grs. |
| (2) | 13,457 tons 6 cwt. 1 qr. 20 lb. | (2) | 5,247 lb. 9 oz. 7 dwt. 22 grs. |
| (3) | 30,847 tons 2 cwt. 3 qrs. 12 lb. | (3) | 25,404 lb. 5 oz. 10 dwt. 20 grs. |
| (4) | 51,301 tons 5 cwt. | (4) | 94,200 lb. 5 oz. 16 dwt. 16 grs. |

- | | |
|-----|---------------------------------|
| | (3) |
| (1) | 4,302 lb. 3 oz. 6 drs. 2 scr. |
| (2) | 3,993 lb. 5 oz. 7 drs. |
| (3) | 21,351 lb. 10 oz. 2 drs. 1 scr. |
| (4) | 45,089 lb. 1 oz. 7 drs. 1 scr. |

- | | |
|-----|---|
| | (4) |
| (1) | 4,774 cub. yards 17 cub. feet 1,692 cub. inches |
| (2) | 11,755 cub. yards 12 cub. feet 168 cub. inches |
| (3) | 48,770 cub. yards 25 cub. feet 60 cub. inches |
| (4) | 138,134 cub. yards 10 cub. feet 1,080 cub. inches |

DIVISION—(WEIGHTS AND MEASURES).

Ex. 56 (Page 93).

A
(1)

- | | |
|-----|--|
| (1) | 273 tons 10 cwt. 17 lb. + $\frac{1}{3}$ |
| (2) | 58 tons 12 cwt. 19 lb. + $\frac{1}{2}$ |
| (3) | 35 tons 13 cwt. 1 qr. 27 lb. + $\frac{1}{2}$ |
| (4) | 2 tons 8 cwt. 1 qr. 1 lb. + $\frac{1}{2}$ |

- (2) (1) 12 cwt. 1 qr. 16 lb. 11 oz. + $\frac{1}{4}$ (1) 11 lb. 2 oz. 8 drs. + $\frac{3}{4}$
 (2) 3 cwt. 1 qr. 6 lb. 5 oz. + $\frac{1}{2}$ (2) 3 lb. 7 oz. 12 drs. + $\frac{1}{4}$
 (3) 1 cwt. 2 qrs. 11 lb. 3 oz. + $\frac{1}{4}$ (3) 1 lb. 10 oz. 4 drs. + $\frac{1}{17}$
 (4) 24 lb. 14 oz. + $\frac{1}{2}\frac{3}{4}$ (4) 2 oz. 3 drs. + $\frac{3}{4}\frac{5}{7}$
- (4) (1) 54 lb. 11 oz. 19 dwts. 19 grs. + $\frac{3}{4}$
 (2) 18 lb. 3 oz. 19 dwts. 22 grs. + $\frac{3}{4}$
 (3) 19 lb. 4 oz. 18 dwts. 18 grs. + $\frac{1}{4}$
 (4) 1 lb. 9 oz. 15 dwts. 3 grs. + $\frac{7}{8}$

B

- (1) (1) 107 lb. 2 oz. 19 grs. + $\frac{1}{4}$ (2) 26 lb. 2 oz. 6 drs. 2 scr. + $\frac{1}{4}$
 (2) 37 lb. 6 oz. 2 dwts. 6 grs. + $\frac{1}{10}$ (2) 9 lb. 11 oz. 7 drs. 1 scr. + $\frac{1}{11}$
 (3) 39 lb. 5 oz. 16 dwts. 2 grs. + $\frac{1}{10}$ (3) 4 lb. 3 drs. 1 scr. + $\frac{3}{4}$
 (4) 2 lb. 1 oz. 12 dwts. 22 grs. + $\frac{3}{8}$ (4) 5 oz. + $\frac{1}{10}\frac{5}{7}$
- (3) (1) 12 oz. 17 grs. + $\frac{2}{5}$ (4) 5 lb. 2 scr. 7 grs. + $\frac{3}{8}$
 (2) 4 oz. 7 drs. 1 scr. 3 grs. + $\frac{1}{10}$ (2) 2 lb. 1 oz. 19 grs. + $\frac{3}{8}$
 (3) 2 oz. 7 drs. 1 scr. 5 grs. + $\frac{1}{10}$ (3) 11 oz. 2 drs. 2 scr. 2 grs. + $\frac{3}{8}$
 (4) 2 drs. 2 grs. + $\frac{1}{10}\frac{1}{2}$ (4) 2 oz. 1 dr. 1 scr. 5 grs. + $\frac{1}{10}$

C

- (1) (1) 27 yrs. 5 mo. 1 wk. 4 dys. + $\frac{1}{10}$ (2) 84 dys. 1 hr. 54 m. 10 s. + $\frac{1}{10}$
 (2) 12 yrs. 3 wks. 5 dys. + $\frac{1}{10}$ (2) 37 dys. 8 hrs. 50 m. 44 s. + $\frac{1}{10}$
 (3) 4 yrs. 10 mo. 1 wk. 5 dys. + $\frac{1}{10}$ (3) 15 dys. 12 hrs. 32 m. 9 s. + $\frac{1}{10}$
 (4) 1 yr. 7 mo. 1 wk. + $\frac{1}{10}$ (4) 2 dys. 20 hrs. 24 m. 12 s. + $\frac{1}{10}$
- (3) (1) 25 yrs. 20 wks. 8 dys. 10 hrs. (4) 9 yrs. 312 dys. 17 hrs. 53 m. + $\frac{1}{10}$
 (2) 1 yr. 42 wks. 2 dys. 5 hrs. + $\frac{1}{10}$ (2) 359 dys. 18 hrs. 35 min. + $\frac{1}{10}$
 (3) 39 wks. 2 dys. 22 hrs. + $\frac{1}{10}$ (3) 158 dys. 17 hrs. 22 min. + $\frac{1}{10}$
 (4) 8 wks. 6 dys. 16 hrs. + $\frac{1}{10}$ (4) 27 dys. 21 hrs. 20 min. + $\frac{1}{10}$

D

- (1) (1) 62 yds. 2 qrs. 1 nl. 1 in. + $\frac{1}{10}$ (2) 41 Fr. ells 4 qrs. 1 nl. 2 in. + $\frac{1}{10}$
 (2) 7 yds. 3 qrs. 1 nl. + $\frac{1}{10}$ (2) 6 Fr. ells 1 qr. 3 nl. 1 in. + $\frac{1}{10}$
 (3) 3 yds. 2 qrs. 2 nl. + $\frac{1}{10}$ (3) 2 Fr. ells 5 qrs. 2 nl. 1 in. + $\frac{1}{10}$
 (4) 1 yd. 1 qr. 2 in. + $\frac{1}{10}$ (4) 2 qrs. 2 nl. 2 in. + $\frac{1}{10}$
- (3) (1) 102 po. 1 ft. 12 in. + $\frac{1}{10}$ (4) 2 mls. 7 fur. 38 po. + $\frac{1}{10}$
 (2) 17 po. 2 yds. 2 ft. 4 in. + $\frac{1}{10}$ (2) 4 fur. 26 po. 1 yd. + $\frac{1}{10}$
 (3) 8 po. 2 yds. 2 ft. 5 in. + $\frac{1}{10}$ (3) 2 fur. 11 po. 4 yds. + $\frac{1}{10}$
 (4) 1 po. 1 vd. 4 in. + $\frac{1}{10}$ (4) 12 po. 1 yd. + $\frac{1}{10}$

E

(1)

- (1) 49 leag. 7 fur. 13 po. + $\frac{2}{3}$
 (2) 9 leag. 2 mls. 4 fur. 26 po. + $\frac{2}{3}$
 (3) 10 leag. 1 ml. 1 fur. 5 po.
 (4) 2 leag. 1 ml. 3 fur. 21 po. + $\frac{1}{10}\frac{1}{10}$

(2)

- (1) 4 sq. po. 16 sq. yds. 7 sq. ft. 139 sq. in. + $\frac{1}{2}$
 (2) 29 sq. yds. 4 sq. ft. 132 sq. in. + $\frac{2}{3}$
 (3) 1 sq. po. 1 sq. yd. 5 sq. ft. 18 sq. in. + $\frac{1}{3}\frac{1}{3}$
 (4) 3 sq. yds. 4 sq. ft. 28 sq. in. + $\frac{1}{3}\frac{1}{3}$

(3)

- (1) 25 ac. 3 ro. 19 sq. po. 20 sq. yds. + $\frac{2}{3}$
 (2) 5 ac. 3 ro. 20 sq. po. 25 sq. yds. + $\frac{1}{10}\frac{9}{10}$
 (3) 6 ac. 0 ro. 2 sq. po. 21 sq. yds. + $\frac{1}{3}\frac{1}{3}$
 (4) 2 ro. 8 sq. po. 2 sq. yds. + $\frac{1}{10}\frac{9}{10}$

(4)

- (1) 74 cub. yds. 11 cub. ft. 1,197 cub. in. + $\frac{2}{11}$
 (2) 18 cub. yds. 5 cub. ft. 446 cub. in. + $\frac{2}{3}$
 (3) 17 cub. yds. 21 cub. ft. 1,000 cub. in. + $\frac{4}{3}$
 (4) 2 cub. yds. 3 cub. ft. 1,243 cub. in. + $\frac{2}{3}\frac{1}{3}$

F

(1)

- (1) 100 cub. yds. 1 cub. ft. 580 cub. in. + $\frac{1}{3}$
 (2) 25 cub. yds. 577 cub. in. + $\frac{1}{3}\frac{1}{3}$
 (3) 21 cub. yds. 1 cub. ft. 1,213 cub. in. + $\frac{2}{3}$
 (4) 4 cub. yds. 716 cub. in. + $\frac{2}{3}\frac{2}{3}$

(2)

- (1) 9 pks. 1 qt. + $\frac{1}{11}$
 (2) 2 pks. + $\frac{2}{3}$
 (3) 1 pk. 1 gal. 1 qt. 1 pt. + $\frac{2}{3}$
 (4) 1 qt. + $\frac{2}{3}\frac{2}{3}$

(3)

- (1) 8 qrs. 6 bush. 1 pk. + $\frac{1}{10}$
 (2) 1 qr. 6 bush. + $\frac{2}{3}\frac{1}{3}$
 (3) 1 qr. 3 bush. 3 pks. 1 gal. + $\frac{1}{3}$
 (4) 1 bush. 1 pk. 1 gal. + $\frac{2}{3}\frac{1}{3}$

(4)

- (1) 32 lds. 3 qrs. 3 pks. + $\frac{2}{3}$
 (2) 5 lds. 2 qrs. 1 bush. 1 pk. + $\frac{4}{3}$
 (3) 3 lds. 4 qrs. 4 bush. 2 pks. + $\frac{7}{3}$
 (4) 2 qrs. 3 bush. 2 pks. + $\frac{2}{3}\frac{2}{3}$

G

(1)

- (1) 2 punc. 52 gals. 0 qts. 0 pts. + $\frac{2}{3}$
 (2) 32 gals. 0 qts. 0 pts. + $\frac{1}{11}$
 (3) 23 gals. 1 pt. + $\frac{2}{3}$
 (4) 4 gals. 1 qt. 1 pt. + $\frac{1}{3}\frac{2}{3}$

(2)

- (1) 14 brls. 35 gals. 2 qts. 1 pt.
 (2) 1 brl. 31 gals. 1 qt. 1 pt. + $\frac{2}{3}$
 (3) 1 brl. 12 gals. 1 qt. 1 pt. + $\frac{1}{3}$
 (4) 4 gals. 2 qts. 1 pt. + $\frac{2}{3}\frac{2}{3}$

- | | |
|--|---|
| (3) | (4) |
| (1) 218 rms. 5 qrs. 19 shts. + $\frac{1}{4}$ | (1) 417 rms. 3 qrs. 4 shts. + $\frac{2}{3}$ |
| (2) 21 rms. 16 qrs. 18 shts. + $\frac{1}{4}$ | (2) 33 rms. 2 qrs. 3 shts. + $\frac{2}{3}$ |
| (3) 16 rms. 11 qrs. 13 shts. + $\frac{2}{3}$ | (3) 25 rms. 2 qrs. 14 shts. + $\frac{2}{3}$ |
| (4) 1 rm. 8 qrs. 10 shts. + $\frac{2}{3}$ | (4) 2 rms. 13 qrs. 18 shts. + $\frac{1}{4}$ |

H

- (1)
 (1) 272 tons 7 cwt. 2 qrs. 13 lb. + $\frac{1}{2}$
 (2) 17 tons 1 qr. 25 lb. + $\frac{2}{3}$
 (3) 12 tons 16 cwt. 1 qr. 12 lb. + $\frac{1}{4}$
 (4) 1 ton 7 cwt. 3 qrs. 4 lb. + $\frac{1}{4}$

- (2)
 (1) 856 lb. 3 oz. 19 dwt. 14 grs. + $\frac{1}{2}$
 (2) 38 lb. 11 oz. 1 dwt. 19 grs. + $\frac{7}{8}$
 (3) 29 lb. 10 oz. 9 dwt. 6 grs. + $\frac{2}{3}$
 (4) 4 lb. 4 oz. 6 dwt. 18 grs. + $\frac{5}{8}$

- (3)
 (1) 2,617 lb. 4 oz. 3 drs. 2 scr. + $\frac{1}{2}$
 (2) 74 lb. 9 oz. 3 drs. + $\frac{1}{4}$
 (3) 60 lb. 2 oz. + $\frac{1}{4}$
 (4) 5 lb. 10 oz. 5 drs. 2 scr. + $\frac{1}{8}$

- (4)
 (1) 1,029 cub. yds. 2 cub. ft. 1,285 cub. in. + $\frac{1}{2}$
 (2) 120 cub. yds. 7 cub. ft. 1,182 cub. in. + $\frac{1}{4}$
 (3) 104 cub. yds. 1 cub. ft. 1,372 cub. in. + $\frac{2}{3}$
 (4) 9 cub. yds. 7 cub. ft. 556 cub. in. + $\frac{2}{3}$

Ex. 57 (Pages 94-96).

A

- (1) 34 mls. 5 fur. 6 yds.
 (2) 418 tons 2 qrs. 12 lb. 15 oz.
 (3) 677 ac. 1 ro. 25 $\frac{1}{2}$ po.
 (4) 72 coins

B

- (1) 7 cwt. 2 qrs. 7 lb. 2 oz. 7 drs.
 (2) 100 ac. 2 ro. 37 po. 28 $\frac{3}{4}$ sq. yds.
 (3) 5 tons 12 cwt. 1 qr. 14 lb.
 (4) 20 yards

C

- (1) 4,236 ac. 0 ro. 27 po.
 (2) 6 $\frac{1}{2}$ acres
 (3) 2,160
 (4) 5 dwts. 3 $\frac{1}{4}$ grs.

D

- (1) 1 fur. 5 po. 2 yds. 2 ft. 8 $\frac{1}{2}$ in.
 (2) 34 times + 3,441 lb. over
 (3) 49 $\frac{1}{3}$ pints.
 (4) 52 ac. 2 ro. 10 po.

E

- (1) 58,806,000 sq. in.
 (2) 2 lb. 3 oz.
 (3) 7
 (4) 120,960 lbs.

F

- (1) 408 lb.
 (2) 37 ac. 2 ro. 31 po. 2 $\frac{3}{4}$ s. yds. 3 s. ft. 30 s. in.
 (3) 27 lb. 8 oz.
 (4) 15,552 bricks

G

- (1) 48 tons 11 cwt. 0 qrs. 23 lbs.
- (2) 132 revolutions
- (3) 220 sq. yds. each
- (4) 1,504 yds. 1 qr.

H

- (1) 288,000 pints
- (2) 8 ft. 6 in.
- (3) 6 lb. 4 oz.
- (4) 1 ton 2 qr.

I

- (1) 9,458 yrs. 16 wks.
- (2) 1 ton 11 cwt. 3 qrs. 14 lb.
- (3) Bullock 720 lb.
- (4) 1,536 $\frac{1}{2}$

J

- (1) 22 tons 13 cwt. 3 qr. 27 lb. 11 oz. 2 dr.
- (2) 8,699 lb. 10 oz.
- (3) 3 miles 2 fur.
- (4) 4 lb. 8 oz.

K

- (1) 187 cub. yds. 20 cub. ft. 646 cub. in.
- (2) 320.016 pints (*w*)
- (3) 5,984 tons 17 cwt. 1 lb. 5 oz.
- (4) 4 tons 18 cwt. 0 qrs. 10 lb.

L

- (1) 1,564 cub. yds. 2 cub. ft. 1,442 cub. in. + 296
- (2) 21 oz. 7 dwts. 3 grs.
- (3) 2,406 cen. 53 yrs. 46 dys. 12 hrs.
- (4) 16 coats

M

- (1) 5,952,480 inches
- (2) 10 miles 400 yards
- (3) 150,353 $\frac{1}{2}$ sq. yards
- (4) 569 quarters (*w*)

N

- (1) 13 cub. yds. 1,020 cub. inches.
- (2) 70,090 bush. 3 pks. 3 qts. + 8
- (3) 18 yards 3 nails 1 $\frac{1}{2}$ inches
- (4) 13 lbs.

ANSWERS.

PRACTICE.

Ex. 58 (Pages 97, 98).

A			B			C			D		
	s.	d.		s.	d.		s.	d.		s.	d.
(1)	2	1	(1)	6	3½	(1)	10	6¾	(1)	4	5¾
(2)	2	6	(2)	4	8½	(2)	5	10¾	(2)	9	10½
(3)	4	2½	(3)	8	5	(3)	9	9½	(3)	12	6½
(4)	5	1	(4)	6	5½	(4)	13	0½	(4)	11	2½
(5)	4	4	(5)	2	5½	(5)	14	8¾	(5)	8	8¾
(6)	6	3	(6)	8	11¾	(6)	12	1	(6)	16	10¾

E			F			G			H		
	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1)	11	2	(1)	0	15	5½	(1)	2	10	2	
(2)	5	8	(2)	0	17	10	(2)	4	3	10¾	
(3)	12	8½	(3)	1	1	7½	(3)	3	2	10	
(4)	17	6	(4)	0	11	8	(4)	6	9	5	
(5)	11	4	(5)	1	9	4½	(5)	8	18	0	
(6)	6	6½	(6)	0	16	6	(6)	16	19	11	

I			J			K			L		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1)	0	12	9	(1)	1	0	6	(1)	13	2	9
(2)	0	9	6	(2)	0	9	6¾	(2)	6	9	6
(3)	1	0	0	(3)	0	12	11¼	(3)	16	0	2½
(4)	1	10	3	(4)	1	13	3	(4)	10	4	0¾
(5)	1	13	0	(5)	1	9	5½	(5)	4	16	1½
(6)	0	15	3	(6)	0	10	11¼	(6)	19	10	4½

M			N				
£	s.	d.	£	s.	d.		
(1)	0	5	8½	(1)	5	15	3½
(2)	2	2	6	(2)	7	6	1½
(3)	9	1	3	(3)	12	0	4½
(4)	1	0	11¾	(4)	9	7	6

Ex. 59 (Pages 98-101).

<i>a</i>				<i>b</i>				<i>c</i>				<i>d</i>			
£	s.	d.		£	s.	d.		£	s.	d.		£	s.	d.	
(1)	1	7	0	(1)	10	13	4	(1)	19	13	1½	(1)	9	6 0½	
(2)	2	2	2	(2)	16	19	2	(2)	17	2	0	(2)	22	5 2½	
(3)	0	15	0	(3)	21	2	2½	(3)	7	19	10½	(3)	20	2 7½	
(4)	1	2	11	(4)	13	18	2½	(4)	22	16	6	(4)	42	19 11½	
(5)	2	10	8	(5)	27	6	0½	(5)	29	8	3	(5)	67	12 3½	
(6)	2	8	0	(6)	18	17	9½	(6)	49	18	4½	(6)	33	16 6½	

B

<i>a</i>				<i>b</i>				<i>c</i>				<i>d</i>			
£	s.	d.		£	s.	d.		£	s.	d.		£	s.	d.	
(1)	44	7	8	(1)	12	17	3	(1)	55	18	1½	(1)	31	7	5½
(2)	22	16	4	(2)	23	17	9	(2)	28	13	9	(2)	60	3	4½
(3)	35	1	2	(3)	34	1	6¾	(3)	19	2	3½	(3)	80	4	10½
(4)	12	14	0	(4)	59	6	8½	(4)	75	3	11½	(4)	47	0	8½
(5)	25	1	10	(5)	49	9	5½	(5)	47	5	5	(5)	43	1	5½
(6)	41	3	2	(6)	78	6	9	(6)	33	0	7½	(6)	15	17	10½

C

a				b				c				d			
£	s.	d.		£	s.	d.		£	s.	d.		£	s.	d.	
(1)	34	3	0	(1)	43	11	0	(1)	59	10	0	(1)	100	10	0
(2)	15	2	0	(2)	37	5	7½	(2)	30	4	0½	(2)	39	2	6
(3)	37	13	9	(3)	57	14	0½	(3)	47	7	7½	(3)	89	15	7½
(4)	90	13	6	(4)	47	7	11	(4)	81	14	2½	(4)	18	15	0
(5)	76	11	9	(5)	37	4	3	(5)	31	5	4	(5)	130	18	5½
(6)	67	5	0	(6)	110	0	9½	(6)	140	16	4	(6)	74	16	3

D

	£	s.	d.
(1)	73	8	1½
(2)	38	7	9
(3)	54	16	9½
(4)	69	15	11

E

a			b			c			d		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1) 23	12	0	(1) 34	17	0	(1) 46	7	0	(1) 97	17	0
(2) 38	8	0	(2) 53	14	6½	(2) 22	13	0	(2) 104	3	3½
(3) 53	11	0	(3) 74	16	8½	(3) 132	9	0	(3) 153	7	8½
(4) 90	7	4	(4) 49	5	3½	(4) 61	7	4½	(4) 24	8	5½
(5) 48	19	0	(5) 91	0	5	(5) 49	16	0	(5) 135	6	8½
(6) 26	6	0	(6) 112	0	1½	(6) 156	3	4½	(6) 183	6	2½

F

	£	s.	d.
(1)	36	11	3
(2)	107	12	7½
(3)	93	15	9
(4)	89	11	6½

G

a			b			c			d		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1) 58	0	0	(1) 217	7	0	(1) 113	17	0	(1) 201	5	0
(2) 69	14	2	(2) 60	0	11½	(2) 165	14	8	(2) 220	12	2
(3) 151	4	2	(3) 84	10	0½	(3) 146	15	2	(3) 161	5	9
(4) 142	5	10	(4) 121	18	7½	(4) 28	3	9	(4) 101	16	11½
(5) 96	19	2	(5) 62	2	0½	(5) 200	14	6½	(5) 40	16	0½
(6) 60	11	8	(6) 141	2	9	(6) 130	0	1½	(6) 78	19	4

H

a			b			c			d		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1) 126	3	0	(1) 85	0	0	(1) 116	2	1½	(1) 232	10	9
(2) 81	15	0	(2) 218	1	11½	(2) 200	5	7½	(2) 151	2	10½
(3) 59	12	0	(3) 111	12	9½	(3) 169	9	9	(3) 192	18	2½
(4) 152	12	6	(4) 92	7	11	(4) 148	6	2	(4) 120	10	10½
(5) 143	9	0	(5) 181	1	4½	(5) 88	5	3½	(5) 102	15	4½
(6) 181	3	6	(6) 73	18	7½	(6) 186	3	5	(6) 244	14	10½

I

a			b			c			d		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1) 242	18	7	(1) 160	17	9½	(1) 88	13	9	(1) 173	11	4½
(2) 138	14	4	(2) 144	13	4½	(2) 227	0	7½	(2) 94	17	5½
(3) 94	4	9	(3) 98	8	4½	(3) 153	7	6	(3) 242	10	2½
(4) 36	9	2	(4) 193	4	10½	(4) 291	5	7½	(4) 283	3	3½
(5) 157	0	8	(5) 86	10	4	(5) 159	11	10½	(5) 103	11	2½
(6) 193	11	7	(6) 173	11	6½	(6) 199	8	9	(6) 177	10	9½

J

a			b			c			d		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1) 264	2	8	(1) 147	4	6½	(1) 259	8	6½	(1) 306	2	9½
(2) 94	11	4	(2) 177	12	3½	(2) 151	3	2	(2) 104	8	4
(3) 175	12	0	(3) 282	3	0	(3) 180	17	5½	(3) 276	18	9
(4) 212	17	4	(4) 312	6	7½	(4) 108	6	1	(4) 119	15	3½
(5) 142	10	0	(5) 51	17	5½	(5) 220	19	3½	(5) 181	9	0½
(6) 278	14	0	(6) 207	13	10½	(6) 155	3	11	(6) 325	11	5½

K

a			b			c			d		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1) 304	1	9	(1) 90	17	7½	(1) 210	18	0	(1) 133	9	10½
(2) 77	14	9	(2) 242	7	9½	(2) 110	13	6	(2) 376	11	10½
(3) 123	4	6	(3) 210	18	9½	(3) 138	19	6½	(3) 235	15	9
(4) 200	18	6	(4) 350	19	11½	(4) 50	13	4	(4) 244	1	6
(5) 233	15	6	(5) 240	8	5½	(5) 314	1	10½	(5) 172	4	2½
(6) 64	16	0	(6) 181	18	4	(6) 326	18	4½	(6) 394	5	3½

L

a			b			c			d		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1) 248	6	8	(1) 311	3	5½	(1) 358	19	4½	(1) 243	2	7
(2) 161	10	10	(2) 187	14	0½	(2) 177	19	6	(2) 304	9	10½
(3) 175	6	8	(3) 155	16	0	(3) 410	11	0	(3) 147	6	4½
(4) 114	15	0	(4) 219	1	0½	(4) 56	14	0	(4) 200	0	9½
(5) 67	10	10	(5) 378	19	0½	(5) 169	15	0	(5) 127	19	4½
(6) 261	18	4	(6) 110	15	8½	(6) 242	11	10½	(6) 392	14	8

M											
a			b			c			d		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1) 242	5	6	(1) 158	15	3½	(1) 426	5	4	(1) 184	0	8½
(2) 337	10	4	(2) 222	18	9	(2) 367	19	0½	(2) 238	3	7½
(3) 315	2	1	(3) 139	9	0½	(3) 260	11	5	(3) 440	0	9
(4) 195	13	3	(4) 402	12	2½	(4) 462	0	3	(4) 467	4	2½
(5) 401	3	7	(5) 298	15	7½	(5) 416	17	6	(5) 317	10	10½
(6) 180	18	1	(6) 435	7	6	(6) 256	5	2	(6) 385	10	11½

N

	£	s.	d.
(1)	219	2	1
(2)	319	10	3½
(3)	210	5	3
(4)	249	11	3

Ex. 60 (Pages 101, 102).

A											
a			b			c			d		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1) 129	3	0	(1) 201	18	8	(1) 113	5	9	(1) 271	19	0
(2) 270	2	0	(2) 282	2	0	(2) 480	15	4½	(2) 240	3	0½
(3) 168	16	0	(3) 344	3	6	(3) 94	13	4½	(3) 131	17	10
(4) 242	19	0	(4) 468	0	0	(4) 155	3	10½	(4) 186	9	1½
(5) 61	15	0	(5) 190	14	5	(5) 414	5	7½	(5) 75	9	9½
(6) 323	17	0	(6) 256	3	1	(6) 519	12	9	(6) 410	3	5

B

	£	s.	d.
(1)	555	8	7½
(2)	377	5	1½
(3)	545	0	0
(4)	493	11	9½
(5)	1,088	11	9
(6)	1,602	1	0

C

	£	s.	d.
(1)	1,491	16	9½
(2)	543	12	9
(3)	1,249	18	4
(4)	2,675	16	8
(5)	2,326	8	1½
(6)	4,165	16	2½

D

	£	s.	d.
(1)	1,618	6	0
(2)	2,551	2	0
(3)	3,496	12	8½
(4)	5,943	1	9½
(5)	3,693	16	10
(6)	2,576	7	8½

E

	£	s.	d.
(1)	1,334	10	8½
(2)	2,887	16	9½
(3)	8,589	17	3
(4)	5,218	3	7½
(5)	7,600	4	0
(6)	3,442	19	11½

F

	£	s.	d.
(1)	2,305	12	6
(2)	781	12	0
(3)	6,457	10	0
(4)	838	19	11½

G

	£	s.	d.
(1)	6,505	4	2½
(2)	2,540	8	11½
(3)	1,051	1	0
(4)	6,044	11	2

H

	£	s.	d.
(1)	1,958	4	1½
(2)	4,626	3	5½
(3)	4,083	9	1½
(4)	7,783	7	2

I

(1)

	£	s.	d.
(a)	2,034	0	6
(b)	3,206	3	6
(c)	3,319	9	0
(d)	4,018	17	6

(2)

	£	s.	d.
(a)	3,163	15	0½
(b)	4,986	18	7½
(c)	5,163	2	5
(d)	6,243	4	9½

(3)

	£	s.	d.
(a)	2,237	10	3½
(b)	3,526	18	6½
(c)	3,651	10	8½
(d)	4,415	8	7½

(4)

	£	s.	d.
(a)	1,760	16	10½
(b)	2,775	11	3½
(c)	2,873	12	6½
(d)	3,474	15	8½

(5)

	£	s.	d.
(a)	1,560	7	3½
(b)	2,459	11	2½
(c)	2,546	9	1½
(d)	3,079	3	5½

(6)

	£	s.	d.
(a)	649	3	8½
(b)	1,023	5	9½
(c)	1,059	8	10½
(d)	1,281	1	6½

J

(1)

	£	s.	d.
(a)	3,113	8	4½
(b)	4,907	11	9½
(c)	5,080	19	6½
(d)	6,143	18	2½

(2)

	£	s.	d.
(a)	2,370	0	4½
(b)	3,735	15	9½
(c)	3,867	15	6½
(d)	4,676	18	2½

(3)

	£	s.	d.
(a)	1,664	18	1½
(b)	2,624	6	10½
(c)	2,717	1	3
(d)	3,285	9	4½

(4)			(5)			(6)		
	£	s. d.		£	s. d.		£	s. d.
(a)	551	18 11½	(a)	1,250	3 8½	(a)	3,465	6 6½
(b)	870	0 8½	(b)	1,970	12 7½	(b)	5,462	5 11½
(c)	900	15 5½	(c)	2,040	5 1	(c)	5,655	5 7½
(d)	1,089	4 8½	(d)	2,467	1 5½	(d)	6,838	7 2½

K

(1)			(2)			(3)		
	£	s. d.		£	s. d.		£	s. d.
(a)	532	3 4½	(a)	1,297	1 6½	(a)	3,385	14 9½
(b)	838	16 9½	(b)	2,044	10 11½	(b)	5,836	16 10½
(c)	868	9 6½	(c)	2,116	15 7½	(c)	5,525	7 11
(d)	1,050	3 2½	(d)	2,559	12 2½	(d)	6,681	6 0½

(4)			(5)			(6)		
	£	s. d.		£	s. d.		£	s. d.
(a)	2,709	9 0½	(a)	2,196	12 10½	(a)	8,458	8 10½
(b)	4,270	16 7½	(b)	3,462	10 1½	(b)	5,451	8 11½
(c)	4,421	14 5	(c)	3,584	16 9	(c)	5,644	0 11½
(d)	5,346	14 9½	(d)	4,384	15 7½	(d)	6,824	15 6½

L

(1)			(2)			(3)		
	£	s. d.		£	s. d.		£	s. d.
(a)	1,396	17 8½	(a)	2,317	2 0½	(a)	745	19 7½
(b)	2,201	17 5½	(b)	3,652	7 7½	(b)	1,175	17 4½
(c)	2,279	13 3½	(c)	3,781	8 5	(c)	1,217	8 8
(d)	2,756	11 4½	(d)	4,572	9 9½	(d)	1,472	1 10½

(4)			(5)			(6)		
	£	s. d.		£	s. d.		£	s. d.
(a)	1,288	9 5½	(a)	2,627	14 3	(a)	3,171	1 3½
(b)	2,030	19 8½	(b)	4,141	19 9	(b)	4,998	9 2½
(c)	2,102	14 9½	(c)	4,288	6 6	(c)	5,175	1 1½
(d)	2,542	12 7½	(d)	5,185	8 9	(d)	6,257	18 5½

Ex. 61 (Page 103).

A			B			C		
£	s.	d.	£	s.	d.	£	s.	d.
(1) 489	18	0	(1) 1,906	6	0	(1) 30,841	2	6
(2) 538	0	0	(2) 1,347	14	6	(2) 19,926	8	8
(3) 728	17	6	(3) 767	13	4	(3) 92,904	14	7
(4) 398	9	0	(4) 2,393	14	1½	(4) 52,630	2	6
(5) 1,556	18	4	(5) 4,298	5	2½	(5) 171,262	5	7½
(6) 999	15	6½	(6) 7,228	4	8	(6) 184,241	14	4½

D			E			F		
£	s.	d.	£	s.	d.	£	s.	d.
(1) 34,102	7	11½	(1) 254,823	15	7½	(1) 2,668,648	2	3
(2) 290,261	16	1½	(2) 804,797	2	8½	(2) 1,415,745	14	4
(3) 195,426	2	9	(3) 372,988	7	0	(3) 1,108,033	19	8½
(4) 192,481	16	8	(4) 436,626	2	4½	(4) 5,713,864	11	7
(5) 597,494	11	1½	(5) 1,539,729	4	5	(5) 1,601,301	1	11½
(6) 722,335	3	1½	(6) 489,784	19	11	(6) 2,177,906	7	11½

G			H			I		
£	s.	d.	£	s.	d.	£	s.	d.
(1) 3,073	5	3	(1) 11,024	11	5	(1) 20,563	7	11½
(2) 3,317	16	3½	(2) 8,935	17	6	(2) 23,944	5	2½
(3) 5,304	9	0½	(3) 20,230	9	4	(3) 110,786	10	5½
(4) 3,621	10	2	(4) 11,610	0	8	(4) 173,035	16	9
(5) 2,205	16	10½	(5) 11,392	9	1½	(5) 72,022	5	8½
(6) 2,114	5	5½	(6) 8,946	10	3½	(6) 28,552	7	5½

J		
£	s.	d.
(1) 138,160	10	8½
(2) 37,620	15	5½
(3) 94,812	12	7½
(4) 620,674	15	6½
(5) 173,589	8	7½
(6) 160,004	7	8½

Ex. 62 (Pages 104-106).

A			B			C		
£	s.	d.	£	s.	d.	£	s.	d.
(1)	34	12 9	(1)	19	18 1½	(1)	19	4 3½
(2)	54	13 9½	(2)	15	18 3½	(2)	32	19 0½
(3)	49	8 6½	(3)	218	18 9	(3)	64	8 4½
(4)	248	9 9	(4)	13	4 1½	(4)	49	17 6½
(5)	811	5 3½	(5)	599	12 7½	(5)	59	7 11½
(6)	2,319	15 7½	(6)	668	19 0	(6)	1	10 0½

D			E			F		
£	s.	d.	£	s.	d.	£	s.	d.
(1)	183	13 11½	(1)	48	7 3	(1)	29	17 3½
(2)	11	9 5½	(2)	43	19 6½	(2)	111	8 10½
(3)	15	13 0½	(3)	98	14 1½	(3)	162	11 6½
(4)	1,363	10 10½	(4)	276	11 6½	(4)	15	12 6½
(5)	2,237	18 3½	(5)	464	19 7½	(5)	183	15 0
(6)	3	0 2½	(6)	277	15 6½	(6)	3,456	2 8

G			H			I		
£	s.	d.	£	s.	d.	£	s.	d.
(1)	46	2 6	(1)	2	9 11½	(1)	2	5 0
(2)	244	7 9	(2)	6	14 2½	(2)	1	2 10½
(3)	14	4 8½	(3)	35	1 1½	(3)	29	8 9
(4)	8,616	16 8	(4)	5	7 7½	(4)	16	1½
			(5)	12	11½	(5)	21	11 9½
			(6)	13	0 0½	(6)	14	4½

J			K			L		
£	s.	d.	£	s.	d.	£	s.	d.
(1)	145	5 11½	(1)	216	6 0	(1)	2,979	3 4
(2)	786	3 4½	(2)	620	15 3½	(2)	2,045	0 11½
(3)	647	11 8½	(3)	488	2 6	(3)	213	6 0
(4)	526	10 10½	(4)	20	11 10½	(4)	117	1 0½
(5)	2,383	10 7½	(5)	37,740	0 0	(5)	54	0 7½
(6)	36	19 2½	(6)	1,318	16 1½	(6)	1,154	16 4½

M			N			O					
£	s.	d.	£	s.	d.	£	s.	d.			
(1)	6	6	0	(1)	5	13	0½	(1)	714	17	6
(2)	3	11	5¼	(2)	40	6	2¼	(2)	2,215	15	7½
(3)	5	5	0	(3)	242	16	3	(3)	190	5	7⅞
(4)	3	4	10¼	(4)	99	10	5⅞	(4)	951	12	9¼
			(5)	6	10	2½⅞	(5)	180	1	1½	
			(6)	472	11	3⅞	(6)	207	0	8½	

P			Q			R					
£	s.	d.	£	s.	d.	£	s.	d.			
(1)	83	9	4½	(1)	306	10	3¼⅞	(1)	13	12	5½
(2)	123	1	8	(2)	977	5	8⅞⅞⅞⅞⅞	(2)	79	9	4½
(3)	11	9	6½	(3)	51	1	10¼⅞	(3)	1	16	9⅞⅞
(4)	3	2	5⅞⅞	(4)	10	10	5¼⅞⅞	(4)	26	4	6⅞⅞⅞⅞⅞
(5)	108	3	2½	(5)	589	15	2½⅞⅞	(5)	277	5	11¼⅞
(6)	86	13	4	(6)	1,187	15	10⅞⅞	(6)	7	19	1⅞

S			
£	s.	d.	
(1)	2	0	7½
(2)	2	12	10
(3)	50	0	0
(4)	156	19	10⅞⅞

EXAMINATIONS IN PRACTICE.

Ex. 63 (Pages 107-110).

A			B			C		
£	s.	d.	£	s.	d.	£	s.	d.
(1)	226	1 7½	(1)	7	13 0	(1)	5	2 1
(2)	1	10 0	(2)	63	4 8	(2)	672	15 0
(3)	61	13 9	(3)	1	10 7½	(3)	2,072	7 9
(4)	21,494	18 11¼	(4)	1,203,200	0 0	(4)	20	4 10¼

D			E			F		
£	s.	d.	£	s.	d.	£	s.	d.
(1) 47	5	0	(1) 0	14	9½	(1) 88,071	1	3
(2) 312	13	8½	(2) 198	6	8	(2) 688	5	11½
(3) 169	7	8½	(3) 976	12	6	(3) 4,011	6	6½
(4) 8	3	6½	(4) 723	5	4½	(4) 29	3	11
G			H			I		
£	s.	d.	£	s.	d.	£	s.	d.
(1) 5	18	2½	(1) 42	15	10	(1) 1,820	8	3½
(2) 12,055	5	7½	(2) 147	9	11½	(2) 25,675	14	7½
(3) 121	12	0½	(3) 577	15	2	(3) 10,535	4	7½
(4) 528	19	10½	(4) 92,031	19	2½	(4) 61,746	1	2½
J			K					
£	s.	d.	£	s.	d.			
(1) 3,214	14	3½	(1) 11,071	6	9			
(2) 50	2	3	(2) 21,586	13	10½			
(3) 8,146	2	0	(3) 27	10	11½			
(4) 5 tons 7 cwt. 1 qr. 8 lbs. 4 oz.			(4) 7	6	11½			
L			M			N		
£	s.	d.	£	s.	d.	£	s.	d.
(1) 151	0	6¼	(1) 119,257	9	10½	(1) 5,115	0	0
(2) 361,591	15	9	(2) 55	0	0	(2) 7	17	9
(3) 5	4	0¼	(3) 71	12	9	(3) 220	9	5½
(4) 1,074	9	0½	(4) 5	9	5¼	(4) 1,033,075	15	8
O			P			Q		
£	s.	d.	£	s.	d.	£	s.	d.
(1) 787	19	5½	(1) 3,236	14	0	(1) 15	6	
(2) 2,767	16	8½	(2) 1	19	4½	(2) 14	16	5¼
(3) 11	18	3½	(3) 9	10¼		(3) 1,041	13	4
(4) 1,586	6	0½	(4) 5	14	0	(4) 239	2	7½
R			S					
£	s.	d.	£	s.	d.			
(1) 1,644	2	6	(1) 352	9	11¼			
(2) 11	11	6½	(2) 14	18	7½			
(3) 2,103	14	1	(3) 72	0	0			
(4) 453	12	0	(4) (a) 1,288 lbs. 14 dwts. 19½ grs.					
			(b) £4,250 12s. 0¼d.					

BILLS OF PARCELS.

Ex. 64 (Pages 111-114).

A			B			C		
£	s.	d.	£	s.	d.	£	s.	d.
0	15	11½	2	2	6½	1	12	3½
D			E			F		
£	s.	d.	£	s.	d.	£	s.	d.
1	16	5½	1	3	8¼	11	14	1
G			H			I		
£	s.	d.	£	s.	d.	£	s.	d.
1	13	4	1	15	4½	8	0	8
J			K			L		
£	s.	d.	£	s.	d.	£	s.	d.
9	17	2½	3	6	7	138	9	9
M			N			O		
£	s.	d.	£	s.	d.	£	s.	d.
23	18	9½	11	15	2½	0	18	3½
P								
£	s.	d.						
1	0	0						

EXAMINATIONS IN BILLS OF PARCELS.

Ex. 65 (Pages 115-118).

A			B			C			D		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1) 2	4	10½	(1) 1	18	9	(1) 0	11	3	(1) 14	17	11½
(2) 34	6	11	(2) 3	19	11	(2) 2	13	2½	(2) 2	5	9¼
(3) 6	2	3	(3) 1	9	3	(3) 18	0	4½	(3) 2	18	2½
E			F			G			H		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1) 12	8	10½	(1) 3	0	0¼	(1) 3	16	4	(1) 93	5	0
(2) 10	7	4½	(2) 60	18	7½	(2) 13	18	3½	(2) 30	19	10½
(3) 4	6	1½	(3) 363	5	8½	(3) 47	16	5½	(3) 37	1	2½

I			J			K			L		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1) 93	16	10	(1) 7	18	8½	(1) 71	17	7	(1) 14	1	10½
(2) 43	16	8½	(2) 62	10	10	(2) 322	14	2½	(2) 9	14	2½
(3) 20	7	7½	(3) 42	17	7½	(3) 30	9	5½	(3) 7	13	10½

M			N			O			P		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
(1) 21	2	9½	(1) 2	11	5½	(1) 186	14	1½	(1) 5	0	1½
(2) 65	11	4½	(2) 38	6	8½	(2) 6	13	1½	(2) 780	17	2½
(3) 8	17	1½	(3) 0	0	9½	(3) 29	5	2½	(3) 1,616	10	10½

SIMPLE PROPORTION.

Ex. 66 (Pages 119-124).

A	B	C	D
(1) 4s.	(1) 1½ acres	(1) 20,160 lbs.	(1) £2 2s. 8d.
(2) 6s.	(2) 48 lbs.	(2) 3d.	(2) £3 1s. 0d.
(3) 4s.	(3) 3s. 4d.	(3) 1s. 3d.	(3) £2 8s. 0d.
(4) 1s. 9d.	(4) £1 5s. 0d.	(4) 5d.	(4) £12

E	F	G	H
(1) 30 pairs	(1) £7 9s. 4d.	(1) 192 dozen	(1) 4 days
(2) £4 14s. 6d.	(2) 120 lbs.	(2) £600	(2) £1,728
(3) £7 4s. 0d.	(3) 210 lbs.	(3) £195	(3) 6s. 3d.
(4) 240 pairs	(4) 567 eggs	(4) £56 14s.	(4) £7,200

I	J	K	L
(1) 36 weeks	(1) 135 hours	(1) 4½ hours	(1) 18 cwt.
(2) 90 miles	(2) £72	(2) 3,420 bricks	(2) 30½ days
(3) 3½ days	(3) 1,512 sheep	(3) 3,000 steps	(3) 31½ hours
(4) £3	(4) £3,840	(4) 13 hours	(4) 3 tons 14½ cwt.

M	N
(1) (a) £6,000	(1) £139 10s.
(1) (b) £4,000	(2) £3,282
(2) 11½ miles	(3) £651 7s.
(3) 13 cwt. 1 qr. 9 lbs. 5 oz. 5½ drs.	(4) 54 years
(4) £2 16s. 8d.	

O		P		Q			
(1) 32 days		(1) 100 days		(1) 6s. 4½d.			
(2) 5 suits		(2) 1s. 5½d.		(2) 264 lbs.			
(3) 33 qrs. 6 bush. 1 pk. 1 gal.		(3) £4 2s. 0d.		(3) £343 15s.			
(4) 108 days		(4) 1s. 3d.		(4) £5			
R		S		T		U	
(1) £52 10s.		(1) 7s. 3½d.		(1) £562 10s.		(1) 1½ days	
(2) 7s. 0¾d.		(2) 3½ days		(2) £336		(2) 1 day	
(3) £15 18s. 0d.		(3) £1,755		(3) 13 hours		(3) 14 hours	
(4) £4 16s. 9d.		(4) £750		(4) 74½ days		(4) 4½ days	
V		W		X			
(1) 18¼ days		(1) 84 men		(1) 40 men			
(2) 4 days		(2) 10 days		(2) 36 hours			
(3) £8 2s. 6d.		(3) £240		(3) 666⅔ barrels			
(4) £12		(4) each man £7 5s.		(4) 76,800 ounces			
		total amount £261					
Y		Z					
(1) 3 lbs.		(1) 54 days					
(2) £12		(2) 13½ minutes					
(3) 494½ seconds		(3) 400⅔ days					
(4) 3,633½ yards		(4) 6,283⅔ marbles					

GREATEST COMMON MEASURE.

Ex. 67 (Page 124).

A		B		C		D	
(1)	11	(1)	9	(1)	18	(1)	3
(2)	25	(2)	12	(2)	63	(2)	33
(3)	14	(3)	16	(3)	97	(3)	29
(4)	13	(4)	23	(4)	103	(4)	37
(5)	17	(5)	47	(5)	5	(5)	15
(6)	5	(6)	53	(6)	7	(6)	100
E				F			
(1)	119	(4)	61	(1)	31	(4)	67
(2)	113	(5)	73	(2)	43	(5)	13
(3)	47	(6)	151	(3)	59	(6)	19

LEAST COMMON MULTIPLE.

Ex. 68 (Page 125).

A	B	C	D
(1) 2,520	(1) 860	(1) 7,200	(1) 540
(2) 60	(2) 17,340	(2) 1,500	(2) 5,040
(3) 72	(3) 8,316	(3) 1,836	(3) 720
(4) 420	(4) 504	(4) 156	(4) 360
(5) 96	(5) 1,080	(5) 864	(5) 1,440
(6) 5,040	(6) 1,134	(6) 360	(6) 2,520

E	F
(1) 5,040	(1) 74,880
(2) 25,920	(2) 126,000
(3) 10,080	(3) 137,592
(4) 4,320	(4) 2,016
(5) 120,960	(5) 997,920
(6) 15,840	(6) 3,826,488,161

VULGAR FRACTIONS.

Ex. 69 (Page 125).

IMPROPER FRACTIONS.

A	B	C	D	E	F
(1) $\frac{1}{2}, \frac{1}{3}$	(1) $\frac{1}{7}, \frac{1}{8}$	(1) $\frac{1}{4}$	(1) $\frac{1}{2}$	(1) $\frac{1}{11}, \frac{1}{12}$	(1) $\frac{1}{11}, \frac{1}{12}$
(2) $\frac{1}{3}, \frac{1}{4}$	(2) $\frac{1}{8}, \frac{1}{9}$	(2) $\frac{1}{2}$	(2) $\frac{1}{2}$	(2) $\frac{1}{11}, \frac{1}{12}$	(2) $\frac{1}{11}, \frac{1}{12}$
(3) $\frac{1}{2}, \frac{1}{3}$	(3) $\frac{1}{8}, \frac{1}{9}$	(3) $\frac{1}{2}$	(3) $\frac{1}{2}$	(3) $\frac{1}{11}, \frac{1}{12}$	(3) $\frac{1}{11}, \frac{1}{12}$
(4) $\frac{1}{3}, \frac{1}{4}$	(4) $\frac{1}{8}, \frac{1}{9}$	(4) $\frac{1}{2}$	(4) $\frac{1}{2}$	(4) $\frac{1}{11}, \frac{1}{12}$	(4) $\frac{1}{11}, \frac{1}{12}$
(5) $\frac{1}{2}, \frac{1}{3}$	(5) $\frac{1}{8}, \frac{1}{9}$	(5) $\frac{1}{2}$	(5) $\frac{1}{2}$	(5) $\frac{1}{11}, \frac{1}{12}$	(5) $\frac{1}{11}, \frac{1}{12}$
(6) $\frac{1}{3}, \frac{1}{4}$	(6) $\frac{1}{8}, \frac{1}{9}$	(6) $\frac{1}{2}$	(6) $\frac{1}{2}$	(6) $\frac{1}{11}, \frac{1}{12}$	(6) $\frac{1}{11}, \frac{1}{12}$

Ex. 70 (Page 125).

WHOLE OR MIXED NUMBERS.

A		B		C		D	
(1)	$1\frac{1}{2}, 1\frac{1}{2}$	(1)	$3\frac{1}{2}, 8\frac{3}{8}$	(1)	$5\frac{1}{4}$	(1)	$10\frac{1}{2}$
(2)	$1\frac{1}{2}, 1\frac{1}{2}$	(2)	$3\frac{1}{2}, 4\frac{1}{2}$	(2)	$6\frac{1}{4}$	(2)	$10\frac{1}{2}$
(3)	$1\frac{1}{2}, 1\frac{1}{2}$	(3)	$4\frac{1}{2}, 3\frac{1}{2}$	(3)	$7\frac{1}{4}$	(3)	$10\frac{1}{2}$
(4)	$2\frac{1}{2}, 1\frac{1}{2}$	(4)	$6\frac{1}{2}, 16\frac{3}{8}$	(4)	$12\frac{1}{2}$	(4)	$90\frac{1}{2}$
(5)	$1\frac{1}{2}, 1\frac{1}{2}$	(5)	$1\frac{1}{4}, 2\frac{1}{4}$	(5)	$8\frac{1}{4}$	(5)	$108\frac{1}{2}$
(6)	$1\frac{1}{2}, 1\frac{1}{2}$	(6)	$2\frac{1}{4}, 2\frac{1}{4}$	(6)	$11\frac{1}{2}$	(6)	$100\frac{1}{2}$
E		F					
(1)	$6\frac{1}{2}, 3\frac{1}{2}$	(1)	$25\frac{1}{2}, 7\frac{1}{2}$				
(2)	$102\frac{1}{2}, 1\frac{1}{2}$	(2)	$64\frac{1}{2}, 7\frac{1}{2}$				
(3)	$72\frac{1}{2}, 1\frac{1}{2}$	(3)	$40\frac{1}{2}, 1\frac{1}{2}$				
(4)	$183\frac{1}{2}, 7\frac{1}{2}$	(4)	$14\frac{1}{2}, 7\frac{1}{2}$				
(5)	$191\frac{1}{2}, 7\frac{1}{2}$	(5)	$2\frac{1}{2}, 7\frac{1}{2}$				
(6)	$1\frac{1}{2}, 1\frac{1}{2}$	(6)	$1\frac{1}{2}, 1\frac{1}{2}$				

Ex. 71 (Page 126).

LOWEST TERMS.

A		B		C		D		E		F	
(1)	$\frac{1}{2}, \frac{1}{2}$	(1)	$\frac{1}{2}, \frac{2}{2}$	(1)	$\frac{1}{2}$	(1)	$\frac{1}{2}$	(1)	$\frac{1}{2}$	(1)	$\frac{1}{2}, \frac{1}{2}$
(2)	$\frac{1}{2}, \frac{1}{2}$	(2)	$\frac{1}{2}, \frac{1}{2}$	(2)	$\frac{1}{2}$	(2)	$\frac{1}{2}$	(2)	$\frac{1}{2}$	(2)	$\frac{1}{2}$
(3)	$\frac{1}{2}, \frac{1}{2}$	(3)	$\frac{1}{2}, \frac{1}{2}$	(3)	$\frac{1}{2}$	(3)	$\frac{1}{2}$	(3)	$\frac{1}{2}$	(3)	$\frac{1}{2}$
(4)	$\frac{1}{2}, \frac{1}{2}$	(4)	$\frac{1}{2}, \frac{1}{2}$	(4)	$\frac{1}{2}$	(4)	$\frac{1}{2}$	(4)	$\frac{1}{2}$	(4)	$\frac{1}{2}$
(5)	$\frac{1}{2}, \frac{1}{2}$	(5)	$\frac{1}{2}, \frac{1}{2}$	(5)	$\frac{1}{2}$	(5)	$\frac{1}{2}$	(5)	$\frac{1}{2}$	(5)	$\frac{1}{2}$
(6)	$\frac{1}{2}, \frac{1}{2}$	(6)	$\frac{1}{2}, \frac{1}{2}$	(6)	$\frac{1}{2}$	(6)	$\frac{1}{2}$	(6)	$\frac{1}{2}$	(6)	$\frac{1}{2}$

Ex. 72 (Page 126).

SIMPLE FRACTIONS.

A		B		C		D	
(1)	$\frac{1}{2}$	(1)	$\frac{1}{2}$	(1)	$3\frac{1}{2}$	(1)	2
(2)	$\frac{1}{2}$	(2)	$\frac{1}{2}$	(2)	3	(2)	42
(3)	$\frac{1}{2}$	(3)	2	(3)	$\frac{1}{2}$	(3)	440
(4)	$\frac{1}{2}$	(4)	$\frac{1}{2}$	(4)	$4\frac{1}{2}$	(4)	$\frac{1}{2}$
(5)	$\frac{1}{2}$	(5)	$\frac{1}{2}$	(5)	$11\frac{1}{2}$	(5)	$\frac{1}{2}$
(6)	$\frac{1}{2}$	(6)	$\frac{1}{2}$	(6)	$18\frac{1}{2}$	(6)	$2\frac{1}{2}$
(7)	$\frac{1}{2}$	(7)	11	(7)	$50\frac{1}{2}$	(7)	36
(8)	$\frac{1}{2}$	(8)	15	(8)	$\frac{1}{2}$	(8)	64
(9)	$\frac{1}{2}$	(9)	$\frac{1}{2}$	(9)	$\frac{1}{2}$	(9)	12
(10)	$\frac{1}{2}$	(10)	6	(10)	$28\frac{1}{2}$	(10)	$94\frac{1}{2}$

Ex. 73 (Page 126).

LEAST COMMON DENOMINATOR.

A	B	C	D
(1) $\frac{2}{3}, \frac{1}{2}$	(1) $\frac{2}{3}, \frac{1}{2}$	(1) $\frac{2}{3}, \frac{2}{3}, \frac{2}{3}$	(1) $\frac{4}{6}, \frac{1}{2}, \frac{1}{3}$
(2) $\frac{1}{3}, \frac{2}{3}$	(2) $\frac{2}{3}, \frac{2}{3}$	(2) $\frac{2}{3}, \frac{2}{3}, \frac{2}{3}$	(2) $\frac{2}{3}, \frac{1}{2}, \frac{1}{3}$
(3) $\frac{1}{3}, \frac{1}{2}$	(3) $\frac{2}{3}, \frac{1}{2}$	(3) $\frac{1}{3}, \frac{1}{2}, \frac{1}{3}$	(3) $\frac{2}{3}, \frac{2}{3}, \frac{2}{3}$
(4) $\frac{1}{3}, \frac{1}{2}$	(4) $\frac{2}{3}, \frac{1}{2}$	(4) $\frac{2}{3}, \frac{1}{2}, \frac{2}{3}$	(4) $\frac{2}{3}, \frac{2}{3}, \frac{1}{2}$
(5) $\frac{2}{3}, \frac{1}{2}$	(5) $\frac{1}{2}, \frac{1}{2}$	(5) $\frac{2}{3}, \frac{2}{3}, \frac{2}{3}$	(5) $\frac{4}{6}, \frac{1}{2}, \frac{1}{3}$
(6) $\frac{1}{3}, \frac{1}{2}$	(6) $\frac{2}{3}, \frac{2}{3}$	(6) $\frac{2}{3}, \frac{2}{3}, \frac{2}{3}$	(6) $\frac{2}{3}, \frac{2}{3}, \frac{2}{3}$
E	F		
(1) $\frac{2}{3}, \frac{2}{3}, \frac{1}{2}, \frac{1}{2}$	(1) $\frac{2}{3}$ greatest, $\frac{1}{2}$ least		
(2) $\frac{2}{3}, \frac{1}{2}, \frac{1}{2}, \frac{1}{2}$	(2) $\frac{1}{2}$ greatest, $\frac{2}{3}$ least		
(3) $\frac{1}{3}, \frac{1}{2}, \frac{1}{2}, \frac{1}{2}$	(3) $\frac{1}{2}, \frac{1}{2}, \frac{1}{2}, \frac{1}{2}$		
(4) $\frac{1}{3}, \frac{1}{2}, \frac{1}{2}, \frac{1}{2}$	(4) $\frac{1}{2}, \frac{1}{2}, \frac{1}{2}, \frac{1}{2}$		
(5) $\frac{1}{3}, \frac{1}{2}, \frac{1}{2}, \frac{1}{2}$			
(6) $\frac{1}{3}, \frac{1}{2}, \frac{1}{2}, \frac{1}{2}$			

Ex. 74 (Page 127).

ADDITION.

A	B	C	D	E	F
(1) 1	(1) $1\frac{1}{2}$	(1) $1\frac{1}{2}$	(1) $1\frac{1}{2}$	(1) $2\frac{1}{2}$	(1) $1\frac{1}{2}; 1\frac{1}{2}; 1\frac{1}{2}$
(2) 1	(2) $1\frac{1}{2}$	(2) $1\frac{1}{2}$	(2) $1\frac{1}{2}$	(2) $2\frac{1}{2}$	(2) $1\frac{1}{2}; 1\frac{1}{2}$
(3) $1\frac{1}{2}$	(3) $1\frac{1}{2}$	(3) $1\frac{1}{2}$	(3) $1\frac{1}{2}$	(3) $1\frac{1}{2}$	(3) $1\frac{1}{2}; 2\frac{1}{2}$
(4) $1\frac{1}{2}$	(4) $1\frac{1}{2}$	(4) $1\frac{1}{2}$	(4) $1\frac{1}{2}$	(4) $1\frac{1}{2}$	(4) $1\frac{1}{2}$
(5) $1\frac{1}{2}$	(5) $1\frac{1}{2}$	(5) $2\frac{1}{2}$	(5) $2\frac{1}{2}$	(5) $2\frac{1}{2}$	
(6) $1\frac{1}{2}$	(6) $1\frac{1}{2}$	(6) $1\frac{1}{2}$	(6) $1\frac{1}{2}$	(6) $2\frac{1}{2}$	

Ex. 75 (Page 127).

SUBTRACTION.

A	B	C	D	E	F
(1) $\frac{1}{2}$	(1) $\frac{1}{2}$	(1) $\frac{1}{2}$	(1) $\frac{1}{2}$	(1) $\frac{1}{2}; \frac{1}{2}; \frac{1}{2}$	(1) $\frac{1}{2}$
(2) $\frac{1}{2}$	(2) $\frac{1}{2}$	(2) $\frac{1}{2}$	(2) $\frac{1}{2}$	(2) $\frac{1}{2}; 1\frac{1}{2}; \frac{1}{2}$	(2) $\frac{1}{2}$
(3) $\frac{1}{2}$	(3) $\frac{1}{2}$	(3) $\frac{1}{2}$	(3) $\frac{1}{2}$	(3) $\frac{1}{2}; \frac{1}{2}; \frac{1}{2}$	(3) $\frac{1}{2}$
(4) $\frac{1}{2}$	(4) $\frac{1}{2}$	(4) $\frac{1}{2}$	(4) $\frac{1}{2}$	(4) $\frac{1}{2}; \frac{1}{2}; \frac{1}{2}$	(4) $\frac{1}{2}$
(5) $\frac{1}{2}$	(5) $\frac{1}{2}$	(5) $\frac{1}{2}$	(5) $\frac{1}{2}$	(5) $\frac{1}{2}; \frac{1}{2}; \frac{1}{2}$	(5) $\frac{1}{2}$, by $\frac{1}{2}$
(6) $\frac{1}{2}$	(6) $\frac{1}{2}$	(6) $\frac{1}{2}$	(6) $\frac{1}{2}$	(6) $\frac{1}{2}; \frac{1}{2}$	(6) $\frac{1}{2}$

**Examinations in Greatest Common Measure. Least Common
Multiple, and Vulgar Fractions**

Ex. 75a (Page 128).

A	B	C	D
(1) $\frac{1}{11}$	(1) 144; 1,729,728	(1) $\frac{1}{11}$	(1) 28 classes
(2) 2,520	(2) £3 6s. 6 $\frac{1}{2}$ d.	(2) $\frac{1}{11}$	(2) £3 17s. 5 $\frac{1}{2}$ d.
(3) $\frac{1}{11}$	(3) $\frac{1}{11}$, $\frac{1}{11}$, $\frac{1}{11}$, $\frac{1}{11}$	(3) £552 17s. 2 $\frac{1}{2}$ d.	(3) $\frac{1}{11}$
(4) $\frac{1}{11}$	(4) $\frac{1}{11}$	(4) 20	(4) 1 minute
E		F	G
(1) $\frac{1}{11}$, $\frac{1}{11}$, $\frac{1}{11}$, $\frac{1}{11}$, $\frac{1}{11}$		(1) $1\frac{1}{11}$	(1) $\frac{25 \times 17}{38 \times 17} = \frac{425}{646}$
(2) $\frac{1}{11}$		(2) 29 $\frac{1}{11}$	(2) $\frac{1}{11}$ lb., by $\frac{1}{11}$ lb.
(3) $\frac{1}{11}$		(3) $\frac{1}{11}$	(3) 1,575 children
(4) 7 apples; 1s. 0 $\frac{1}{2}$ d.		(4) $\frac{1}{11}$	(4) $\frac{1}{11}$

ANSWERS.

Ex. 76 (Page 129).

LEAST COMMON DENOMINATOR.

A	B	C
(1) $\frac{9, 5}{12}$	(1) $\frac{21, 27, 16}{42}$	(1) $\frac{24, 20, 15, 12}{240}$
(2) $\frac{25, 21}{45}$	(2) $\frac{6, 33, 26}{36}$	(2) $\frac{380, 210, 532, 225}{570}$
(3) $\frac{1, 8}{14}$	(3) $\frac{80, 88, 7}{112}$	(3) $\frac{440, 112, 88, 297}{528}$
(4) $\frac{35, 22}{50}$	(4) $\frac{105, 196, 180}{280}$	(4) $\frac{420, 392, 175, 180}{1,120}$
(5) $\frac{33, 72}{88}$	(5) $\frac{91, 156, 140}{364}$	(5) $\frac{180, 6, 28, 15}{200}$
(6) $\frac{35, 20}{42}$	(6) $\frac{54, 33, 88}{99}$	(6) $\frac{12, 18, 16, 27}{132}$

D	E
(1) $\frac{594, 825, 770, 720, 36}{990}$	(1) $\frac{100, 225, 384}{2,400}$
(2) $\frac{860, 560, 75, 147, 135}{630}$	(2) $\frac{450, 378, 70, 75}{540}$
(3) $\frac{1,386, 1,890, 147, 176, 990}{2,310}$	(3) $\frac{24, 12, 14, 21}{5,040}$
(4) $\frac{128, 121, 396}{528}$	(4) $\frac{36, 25, 28, 11}{60}$
(5) $\frac{30, 96, 84, 9, 25}{360}$	(5) $\frac{204, 136, 27}{867}$
(6) $\frac{20, 12, 10, 27, 150}{360}$	(6) $\frac{800, 210, 140, 75, 132}{1,080}$

Ex. 77 (Page 129).

ADDITION.

A	B	C	D	E
(1) $1\frac{1}{2}$	(1) $2\frac{1}{2}$	(1) $1\frac{1}{2}$	(1) $11\frac{1}{2}$	(1) $18\frac{1}{2}$
(2) $2\frac{1}{2}$	(2) $1\frac{1}{2}$	(2) $1\frac{1}{2}$	(2) $18\frac{1}{2}$	(2) $7\frac{1}{2}$
(3) $1\frac{1}{2}$	(3) $1\frac{1}{2}$	(3) $1\frac{1}{2}$	(3) $15\frac{1}{2}$	(3) $13\frac{1}{2}$
(4) $1\frac{1}{2}$	(4) $1\frac{1}{2}$	(4) $1\frac{1}{2}$	(4) $28\frac{1}{2}$	(4) $24\frac{1}{2}$
(5) $1\frac{1}{2}$	(5) $1\frac{1}{2}$	(5) $1\frac{1}{2}$	(5) $14\frac{1}{2}$	(5) $27\frac{1}{2}$
(6) $1\frac{1}{2}$	(6) $1\frac{1}{2}$	(6) $1\frac{1}{2}$	(6) $19\frac{1}{2}$	(6) $5\frac{1}{2}$

F

- (1) $1\frac{1}{2}$; $23\frac{1}{2}$ (3) $32\frac{1}{2}$
 (2) $25\frac{1}{2}$ (4) $24\frac{1}{2}$

Ex. 78 (Pages 129, 130).

SUBTRACTION.

A	B	C	D	E
(1) $\frac{1}{2}$	(1) $\frac{1}{2}$	(1) $\frac{1}{2}$	(1) $8\frac{1}{2}$	(1) $\frac{1}{2}$
(2) $\frac{1}{2}$	(2) $1\frac{1}{2}$	(2) $12\frac{1}{2}$	(2) $3\frac{1}{2}$	(2) $4\frac{1}{2}$
(3) $\frac{1}{2}$	(3) $2\frac{1}{2}$	(3) $6\frac{1}{2}$	(3) $5\frac{1}{2}$	(3) $2\frac{1}{2}$
(4) $\frac{1}{2}$	(4) $2\frac{1}{2}$	(4) $1\frac{1}{2}$	(4) $3\frac{1}{2}$	(4) $\frac{1}{2}$
(5) $\frac{1}{2}$	(5) $\frac{1}{2}$	(5) $2\frac{1}{2}$	(5) $17\frac{1}{2}$	(5) $\frac{1}{2}$
(6) $\frac{1}{2}$	(6) $6\frac{1}{2}$	(6) $1\frac{1}{2}$	(6) $12\frac{1}{2}$	(6) $\frac{1}{2}$

Ex. 79 (Page 130).

MULTIPLICATION.

A	B	C	D	E
(1) $\frac{1}{2}$	(1) 8	(1) 60	(1) $16\frac{1}{2}$	(1) $62\frac{1}{2}$
(2) $\frac{1}{2}$	(2) 6	(2) 90	(2) $29\frac{1}{2}$	(2) 22
(3) $\frac{1}{2}$	(3) 10	(3) 99	(3) 1	(3) $\frac{1}{2}$
(4) $\frac{1}{2}$	(4) 6	(4) 180	(4) 17	(4) 1
(5) $\frac{1}{2}$	(5) 18	(5) 95	(5) $13\frac{1}{2}$	(5) $\frac{1}{2}$
(6) $\frac{1}{2}$	(6) 6	(6) $16\frac{1}{2}$	(6) $37\frac{1}{2}$	(6) 63

F

- (1) $\frac{1}{2}$; 1; $\frac{1}{2}$ (4) $1\frac{1}{2}$
 (2) $\frac{1}{2}$ (5) $27\frac{1}{2}$; $\frac{1}{2}$
 (3) $1\frac{1}{2}$ (6) $\frac{1}{2}$; $10\frac{1}{2}$

Ex. 80 (*Page 130*).

DIVISION.

A	B	C	D	E
(1) $\frac{2}{3}$	(1) $\frac{1}{4}$	(1) 6	(1) $1\frac{2}{3}$	(1) $2\frac{1}{2}$
(2) $1\frac{1}{2}$	(2) $\frac{1}{2}$	(2) $3\frac{1}{2}$	(2) $1\frac{1}{2}$	(2) $1\frac{1}{2}$
(3) $1\frac{1}{2}$	(3) $\frac{1}{2}$	(3) 3	(3) $\frac{1}{2}$	(3) 2
(4) $\frac{1}{4}$	(4) $\frac{1}{2}$	(4) 5	(4) $\frac{1}{2}$	(4) $\frac{1}{4}$
(5) 3	(5) $\frac{1}{2}$	(5) 7	(5) $5\frac{1}{2}$	(5) $\frac{1}{4}$
(6) $\frac{1}{4}$	(6) $\frac{1}{4}$	(6) 4	(6) $2\frac{1}{2}$	(6) $26\frac{1}{4}$

F

- (1) $\frac{1}{2}$; $\frac{1}{3}$; $\frac{1}{4}$; $\frac{1}{5}$; $\frac{1}{6}$; $\frac{1}{7}$; 9
 (2) 3; $4\frac{1}{2}$; $12\frac{1}{2}$; $\frac{1}{4}$; $\frac{1}{5}$
 (3) $\frac{1}{4}$
 (4) 90
 (5) $106\frac{1}{2}$
 (6) $\frac{1}{4}$

Ex. 81 (*Page 131*).

A	B	C	D	E
(1) $2\frac{1}{2}$	(1) $\frac{1}{4}$	(1) $\frac{1}{2}$	(1) $5\frac{1}{2}$	(1) $\frac{1}{4}$
(2) $\frac{1}{2}$	(2) $\frac{1}{4}$	(2) $28\frac{1}{2}$	(2) $1\frac{1}{2}$	(2) $\frac{1}{4}$
(3) $6\frac{1}{2}$	(3) $\frac{1}{4}$	(3) $7\frac{1}{2}$	(3) $\frac{1}{4}$	(3) $\frac{1}{4}$
(4) $4\frac{1}{2}$	(4) $2\frac{1}{2}$	(4) $2\frac{1}{2}$	(4) $12\frac{1}{2}$	(4) $\frac{1}{4}$

Ex. 82 (*Pages 131, 132*).

A	B
(1) 13s. 4d.; 15s.; 16s.; 16s. 8d.; 7s. 6d.	(1) 2s.
(2) £2 1s. 8d.	(2) £26 13s. 4d.
(3) £1 8s.	(3) 10s.
(4) £4	(4) 10d.

C	D
(1) £42 15s.	(1) 3 weeks
(2) $2\frac{1}{2}$ cwts.; $1\frac{1}{2}$ cwts.	(2) 16 miles
(3) 4 oz. 10 dwts.; 2 fur. 20 po.	(3) 40 yards; 15 poles
(4) 36 quarters	(4) 2 oz. 10 dwts.; 1 ac. $3\frac{1}{2}$ r'

E

- (1) $3\frac{1}{2}$ nails; 6 bushels; 4 lbs.
 (2) $13\frac{1}{2}$ cubic feet; 16 grains; $3\frac{1}{2}$ gills
 (3) 3 lbs.; 1 ton 3 qrs. 9 lbs. $5\frac{1}{2}$ oz.
 (4) 7 lbs.

F

- (1) £7 15s.; £21 13s. 4d.
 (2) £55 4s. 2d.
 (3) £1 1s. $0\frac{1}{2}$ d.
 (4) 5 cwts.

Ex. 83 (Page 183).

A

- (1) $\frac{1}{2}$; $\frac{1}{3}$; $\frac{1}{4}$; $\frac{1}{5}$; $\frac{1}{6}$
 (2) $\frac{1}{6}$; $\frac{1}{12}$; $\frac{1}{18}$; $\frac{1}{24}$
 (3) $\frac{1}{12}$; $\frac{1}{18}$; $\frac{1}{24}$; $\frac{1}{36}$
 (4) $\frac{1}{18}$; $\frac{1}{36}$

B

- (1) $\frac{1}{12}$; $\frac{1}{18}$
 (2) $\frac{1}{24}$
 (3) $\frac{1}{36}$
 (4) $\frac{1}{48}$

C

- (1) $\frac{1}{12}$; $\frac{1}{18}$
 (2) $\frac{1}{24}$
 (3) $\frac{1}{36}$
 (4) $\frac{1}{48}$

D

- (1) $\frac{1}{12}$
 (2) $\frac{1}{18}$
 (3) $\frac{1}{24}$
 (4) $\frac{1}{36}$

E

- (1) $\frac{1}{12}$
 (2) $\frac{1}{18}$
 (3) $\frac{1}{24}$
 (4) $\frac{1}{36}$

F

- (1) $\frac{1}{12}$
 (2) $\frac{1}{18}$
 (3) $\frac{1}{24}$
 (4) $\frac{1}{36}$

EXAMINATIONS IN VULGAR FRACTIONS.

Ex. 84 (Pages 182-187).

A

- (1) $\frac{1}{12}$
 (2) $\frac{1}{18}$
 (3) $\frac{1}{24}$ and $\frac{1}{36}$
 (4) $18\frac{1}{2}$

B

- (1) $\frac{1}{12}$
 (2) $2\frac{1}{2}$
 (3) $4\frac{1}{2}$
 (4) $8\frac{1}{2}$

C

- (1) $\frac{1}{12}$
 (2) $3\frac{1}{2}$
 (3) 1
 (4) $\frac{1}{12}$

D

- (1) $1\frac{1}{2}$
 (2) $\frac{1}{12}$
 (3) $9\frac{1}{2}$
 (4) £11,280

E

- (1) 18s. 3d.
 (2) 232 inches
 (3) $24\frac{1}{2}$
 (4) £3,666 13s. 4d.

F

- (1) $\frac{1}{12}$
 (2) $\frac{1}{18}$
 (3) $2s. 1\frac{1}{2}d.$
 (4) £6 5s.

G

- (1) $\frac{1}{12}$
 (2) $2\frac{1}{2}$
 (3) $1\frac{1}{2}$
 (4) $\frac{1}{12}$

H

- (1) 1 hour $56\frac{1}{2}$ minutes
 (2) the man - $7s. 3\frac{1}{2}d.$
 the women $7s. 3\frac{1}{2}d.$
 the children $5s. 5\frac{1}{2}d.$
 (3) 384
 (4) £150,000

I

- (1) $\frac{1}{12}$
 (2) £6,666 13s. 4d.
 (3) $\frac{1}{12}$
 (4) $4s. 4\frac{1}{2}d.$

- | | | | |
|--|---|---|---|
| <p>J</p> <p>(1) $1\frac{1}{2}$</p> <p>(2) $1\frac{1}{2}$</p> <p>(3) $1\frac{1}{2}$</p> <p>(4) $236\frac{1}{2}$</p> | <p>K</p> <p>(1) 200</p> <p>(2) 300</p> <p>(3) $1\frac{1}{2}$</p> <p>(4) $\frac{1}{2}$</p> | <p>L</p> <p>(1) $1\frac{1}{2}$</p> <p>(2) $\frac{11}{12\frac{1}{2}}$</p> <p>(3) $\frac{1}{2}$</p> <p>(4) $\frac{1}{2}$</p> | <p>M</p> <p>(1) 90</p> <p>(2) £28,800</p> <p>(3) £1; £2; £4</p> <p>(4) £19 1s. 7d.</p> |
| <p>N</p> <p>(1) 6s. 7$\frac{1}{2}$d.</p> <p>(2) $5\frac{1}{2}$</p> <p>(3) 86$\frac{3}{4}$ feet</p> <p>(4) 654$\frac{1}{2}$ square yards</p> | <p>O</p> <p>(1) £1 13s. 5$\frac{1}{2}$d.</p> <p>(2) $\frac{1}{2}$ p.</p> <p>(3) 5$\frac{1}{2}$ hours</p> <p>(4) £20 0s. 1d.</p> | <p>P</p> <p>(1) £1 1s. 7$\frac{1}{2}$d.</p> <p>(2) 400</p> <p>(3) 1$\frac{1}{2}$d.</p> <p>(4) 4,000</p> | |
| <p>Q</p> <p>(1) 1,533</p> <p>(2) £1,000</p> <p>(3) £5; £4 3s. 4d.; 16s. 8d.</p> <p>(4) (a) $\frac{1}{2}$ p.</p> <p style="padding-left: 20px;">(b) 8s. 9d.</p> | <p>R</p> <p>(1) 600</p> <p>(2) 36s.</p> <p>(3) £3,600</p> <p>(4) 2s. 6d.</p> | <p>S</p> <p>(1) $\frac{1}{2}$ p.</p> <p>(2) no answer</p> <p>(3) £5,250</p> <p>(4) 12$\frac{1}{2}$ hours</p> | |
| <p>T</p> <p>(1) £228$\frac{1}{2}$; £457$\frac{1}{2}$; £914$\frac{1}{2}$; £400</p> <p>(2) $\frac{1}{2}$ p.</p> <p>(3) 17s. 5d.</p> <p>(4) $\frac{1}{2}$</p> | <p>U</p> <p>(1) 83$\frac{1}{2}$</p> <p>(2) 454</p> <p>(3) $\frac{1}{2}$ p.</p> <p>(4) $\frac{1}{2}$ and $\frac{1}{2}$ p.</p> | <p>V</p> <p>(1) 213$\frac{1}{2}$ acres</p> <p>(2) 2$\frac{1}{2}$ days</p> <p>(3) 5 hours</p> <p>(4) 600 and 700</p> | |
| <p>W</p> <p>(1) £600; £200; £100</p> <p>(2) $\frac{1}{2}$ p.</p> <p>(3) 1$\frac{1}{2}$ p.</p> <p>(4) 12$\frac{1}{2}$ p.</p> | <p>X</p> <p>(1) 5s.</p> <p>(2) 159$\frac{1}{2}$</p> <p>(3) £210</p> <p>(4) $1\frac{1}{2}$ p.</p> | <p>Y</p> <p>(1) 2$\frac{1}{2}$ and $\frac{1}{2}$ p.</p> <p>(2) (a) 24$\frac{1}{2}$ p.; (b) 12$\frac{1}{2}$ p.</p> <p style="padding-left: 20px;">(c) 228; (d) 1</p> <p>(3) 40$\frac{1}{2}$ p.; $\frac{1}{2}$; 3$\frac{1}{2}$ p.</p> <p>(4) (a) £88 4s. 5$\frac{1}{2}$d.</p> <p style="padding-left: 20px;">(b) $\frac{1}{2}$ p.</p> | |
| <p>Z</p> <p>(1) £3</p> <p>(2) $\frac{1}{2}$ of 8 by $\frac{1}{2}$ p.</p> <p style="padding-left: 40px;">2</p> <p>(3) £3 4s.</p> <p>(4) 1 and $\frac{1}{2}$ p.</p> | | | |

Ex. 85 (Page 137).

A		B	
(1)	4; 7½; 4½	(1)	£9 18s. 2d.
(2)	3	(2)	66 minutes
(3)	£3 18s. 1d.	(3)	no answer required
(4)	4 dwts. 17½ grains	(4)	3¼ minutes

DECIMAL FRACTIONS.**Ex. 86** (Page 138).

A	B	C	D	E	F
(1) .1	(1) .009	(1) .5	(1) .175	(1) .0000001	(1) .008
(2) .01	(2) .23	(2) .6	(2) .18	(2) .8	(2) .00032
(3) .3	(3) .099	(3) .25	(3) .000423	(3) .875	(3) .08
(4) .03	(4) .0003	(4) .125	(4) .09375	(4) .0625	(4) .004
(5) .13	(5) .07	(5) .75	(5) .625	(5) .21875	(5) .015
(6) .001	(6) .0999	(6) .05	(6) .12	(6) .16	(6) .014

Ex. 87 (Page 138).

A	B	C	D	E	F
(1) ⅓	(1) ½	(1) ⅓	(1) ⅓	(1) 6½	(1) ⅓
(2) ⅓	(2) ⅓	(2) ⅓	(2) ⅓	(2) 7½	(2) ⅓
(3) ⅓	(3) ⅓	(3) ⅓	(3) ⅓	(3) 32½	(3) ⅓
(4) ⅓	(4) ⅓	(4) ⅓	(4) ⅓	(4) 5½	(4) ⅓
(5) ⅓	(5) ⅓	(5) ⅓	(5) ⅓	(5) 3⅓	(5) ⅓
(6) ⅓	(6) ⅓	(6) ⅓	(6) ⅓	(6) 4½	(6) ⅓

Ex. 88 (Page 138).

A	B	C
(1) 24.99	(1) 69.87762	(1) 404.6359
(2) 323.51905	(2) 54.4103856	(2) 1,656.0025
(3) 84.75978	(3) 303.191475	(3) 346.354575
(4) 51.37562	(4) 41.441	(4) 10.1638012

D

(1)	1,172.11343
(2)	435.51202
(3)	269.26674
(4)	3,497.7289

Ex. 89 (Page 139).

A	B	C
(1) 1.99	(1) 551.881	(1) 295.9835
(2) .099	(2) 37.0756	(2) 5.91839
(3) .8991	(3) 3.07146	(3) 2.30227
(4) 1.0878	(4) 186.03499	(4) 4.107
D	E	F
(1) 178.8832	(1) 215.09317	(1) 131.1999
(2) 4.09114	(2) 228.01359	(2) .79835
(3) 9.55453	(3) 1.18914	(3) 1.08642
(4) 15.099862	(4) 8.795125	(4) 3.89499

Ex. 90 (Page 139).

A		B		C		D	
(1)	·06	(1)	·0001	(1)	46·8	(1)	4·34
(2)	·32	(2)	·00495	(2)	·4934	(2)	31·906
(3)	·0132	(3)	·0252	(3)	9·5256	(3)	4·5621
(4)	·0156	(4)	·0324	(4)	103·768	(4)	1·908
(5)	·216	(5)	·2412	(5)	·044685	(5)	3·13
(6)	·252	(6)	·05265	(6)	·051108	(6)	1,521·254
E		F		G			
(1)	499·585	(1)	1,693·848	(1)	·00000006		
(2)	7·76721	(2)	576·576	(2)	·04444		
(3)	·000462	(3)	·938182	(3)	86·424		
(4)	·4944	(4)	·048	(4)	53·568		
(5)	10·548	(5)	12,247·119324	(5)	10·03574		
(6)	·693936	(6)	5·353184	(6)	14·9472		

Ex. 91 (Page 140).

A	B	C	D
(1) .3	(1) .005	(1) 1.5	(1) 3.1
(2) .8	(2) .011	(2) .002	(2) 6.02
(3) .11	(3) .012	(3) .012	(3) 4.11
(4) .12	(4) .01	(4) 1.4	(4) 21200
(5) .9	(5) .201	(5) .0005	(5) .313
(6) .7	(6) .405	(6) .0015	(6) 505.4

E		F	
(1)	2.05	(1)	237.9
(2)	.0011	(2)	187.2
(3)	.0015	(3)	67.013
(4)	.012	(4)	.0014375
(5)	.12	(5)	371.0124
(6)	.0016	(6)	1.0216

CIRCULATING DECIMALS.

Ex. 92 (Page 140).

A		B		C	
(1)	$\dot{3}$	(1)	$\dot{4}$	(1)	$\dot{0}2\dot{7}$
(2)	$\dot{8}\dot{3}$	(2)	$\dot{2}3809\dot{5}$	(2)	$\dot{1}30769\dot{2}$
(3)	$\dot{5}7142\dot{8}$	(3)	$\dot{2}35294117647058\dot{8}$	(3)	$\dot{0}785714\dot{2}$
(4)	$\dot{2}\dot{7}$	(4)	$\dot{3}8461\dot{5}$	(4)	$\dot{0}069230\dot{7}$
(5)	$\dot{4}1\dot{6}$	(5)	$\dot{2}91\dot{6}$	(5)	$\dot{1}2\dot{7}$
(6)	$\dot{1}5789473684210526\dot{3}$	(6)	$\dot{7}\dot{2}$	(6)	$\dot{2}3076\dot{9}$

D		E		F	
(1)	$5\dot{7}\dot{2}$	(1)	$13\dot{3}$	(1)	$15\dot{1}$
(2)	$24\dot{5}$	(2)	$15\dot{2}$	(2)	$\dot{2}0987654\dot{3}$
(3)	$11\cdot0\dot{7}1428\dot{5}$	(3)	$\dot{0}3\dot{2}$	(3)	$\dot{1}\dot{4}$
(4)	$9\cdot91\dot{6}$	(4)	$\dot{0}1\dot{2}$	(4)	$1\cdot\dot{3}0769\dot{2}$
(5)	$7\cdot0\dot{7}1428\dot{5}$	(5)	$28\cdot2\dot{7}$	(5)	$\dot{2}40\dot{1}$
(6)	$13\cdot2\dot{3}$	(6)	$13\cdot\dot{2}8571\dot{4}$	(6)	$\dot{5}840\dot{1}$

Ex. 93 (Page 140).

A	B	C	D	E
(1) $2\frac{1}{2}$	(1) $\frac{7}{10}$	(1) $\frac{17}{100}$	(1) $\frac{33}{100}$	(1) $2\frac{1}{10}$
(2) $\frac{1}{11}$	(2) $\frac{1}{11}$	(2) $3\frac{1}{11}$	(2) $\frac{3}{11}$	(2) $5\frac{1}{11}$
(3) $\frac{3}{11}$	(3) $\frac{1}{10}$	(3) $4\frac{1}{10}$	(3) $3\frac{1}{10}$	(3) $1\frac{1}{11}$
(4) $\frac{1}{10}$	(4) $\frac{1}{10}$	(4) $3\frac{1}{10}$	(4) $4\frac{1}{10}$	(4) $\frac{1}{11}$
(5) $\frac{1}{10}$	(5) $\frac{1}{10}$	(5) $4\frac{1}{10}$	(5) $1\frac{1}{10}$	(5) $\frac{1}{11}$
(6) $\frac{1}{10}$	(6) $\frac{1}{10}$	(6) $5\frac{1}{11}$	(6) $\frac{1}{10}$	(6) $2\frac{1}{10}$

Ex. 94 (Page 141).**A**

- (1) 19·766551....
 (2) 18·055353....
 (3) 27·341168....
 (4) 105·635091....

B

- (1) 29·916740....
 (2) 39·908290....
 (3) 33·842929....
 (4) 33·419191....

C

- (1) 1·318989....; 3·197007....; ·847474....
 (2) ·892392....; 5·110410....; 2·245945....
 (3) 1·266666....; 2·193120....; 7·308686....
 (4) 4·834343....; 9·091919....; 6·187878....

D

- (1) 3·259; 9·679012345; 8·209876543; 21·469135802
 (2) ·93; ·185; 2·06; 4·06
 (3) 2·096774193548387; ·3512014+
 ·566137; 1·494071
 (4) (a) ·9076923; (c) ·7188119099;
 (b) 1·413008; (d) 3·9318

Ex. 95 (Page 141).

- A** (1) 10s.; 5s.; 2s. 6d.; 12s. 6d.; 7s. 6d.
 (2) 15s.; 6s. 3d.; 3s. 1½d.; 17s. 6d.
 (3) 4s. 10½d.; 8s. 1½d.; £2 7s. 6d.
 (4) 15s. 7½d.; £3 18s.; £2 3s.
- B** (1) 47 guineas; £4 3s. 4d.
 (2) 5s. 3d.; 6s. 3½d.; £2 3s.; £7 7s.
 (3) 1½ feet; 1½ feet; 2½ feet; ¾ feet.
 (4) 7 oz. 4 dwts.; 3 lbs.; 1 lb.
- C** (1) 2 qrs.; 1 cwt. 2 qrs. 14 lbs.; 1,540 yards; 3 roods.
 (2) ¾ mile; 3 bushels 1½ pecks; 648 cubic inches.
 (3) 2 oz. 2½ drs.; 2 days 3½ hours; 3 yards 0 feet 6½ inches.
 (4) 1½d.; 1d.; 10d.

Ex. 86 (Page 142).

- A** (1) $\cdot 125$; $\cdot 25$; $\cdot 2$; $\cdot 3$; $\cdot 16$.
 (2) $\cdot 375$; $\cdot 5$; $\cdot 625$; $\cdot 75$; $\cdot 875$.
 (3) $\cdot 06$; $\cdot 0625$; $\cdot 025$; $\cdot 03$; $\cdot 0125$; $\cdot 083$.
 (4) $\cdot 25$; $\cdot 75$; $\cdot 125$; $\cdot 16$; $\cdot 2$.
- B** (1) $\cdot 3$; $\cdot 25$; $\cdot 16$; $\cdot 5$; $\cdot 125$.
 (2) $\cdot 1$; $\cdot 05$; $\cdot 04$; $\cdot 03$; $\cdot 06$.
 (3) $\cdot 1083$.
 (4) $\cdot 0416$; $\cdot 0138$.
- C** (1) $\cdot 045$; $\cdot 05$.
 (2) $\cdot 16$; $\cdot 125$.
 (3) $\cdot 1$; $\cdot 00625$.
 (4) $\cdot 05$; $\cdot 0083$.

EXAMINATIONS IN DECIMAL FRACTIONS.**Ex. 87** (Pages 142-147).

- | A | B | C |
|-------------------|-------------------------------|---------------------------------|
| (1) $\cdot 65625$ | (1) $\cdot 15625$ | (1) £14 18s. 7d. |
| (2) $\cdot 84$ | (2) 150 | (2) 3-104 and 2-004 |
| (3) 26-6695 | (3) 241 days 22 min. 30 sec. | (3) $\cdot 375$ and $\cdot 125$ |
| (4) $\cdot 01875$ | (4) $\cdot 03$ by $\cdot 003$ | (4) 2,500 |
-
- | D | E | F | G |
|-----------------|-------------------|-------------------|------------------------|
| (1) 1,500 | (1) 19 | (1) 270 | (1) 1-85 and $\cdot 4$ |
| (2) 2,100 | (2) $\cdot 78125$ | (2) £3 2s. 6d. | (2) 2-5 and $\cdot 5$ |
| (3) £18 15s. | (3) 30-625 days | (3) $\cdot 02916$ | (3) 16s. |
| (4) $\cdot 021$ | (4) 120 men | (4) £105 | (4) $\cdot 2$ |
-
- | H | I | J | K |
|----------------|--|----------------|-------------------|
| (1) £50,000 | (1) $\cdot 08280423$ | (1) $\cdot 12$ | (1) 2,000 |
| (2) 64 yards | (2) $1\frac{1}{4}$; $1\frac{7}{9}$ 1505 | (2) 10-9 | (2) $\cdot 03125$ |
| 8 yards black | (3) 350 | (3) 186-94 | (3) $\cdot 225$ |
| 24 yards white | (4) 48-75 | (4) 3,014-5 | (4) $\cdot 1$ |
| 8 yards red | | | |
| 24 yards blue | | | |
| (3) £450 | | | |
| (4) $\cdot 05$ | | | |

L

- (1) 300 yards
 (2) £7 10s.
 (3) £2 16s. 3d.
 (4) 100 sheep; 75 cows; 25 horses

M

- (1) £210
 (2) $1\frac{1}{2}$ hrs
 (3) 1 hour 6 $\frac{1}{2}$ minutes
 (4) 27 days 18 $\frac{1}{2}$ hours

N

- (1) (a) 22; (b) $\cdot 07\frac{1}{2}$
 (2) 96
 (3) 500; 800; 100
 (4) 4·2142857 miles

O

- (1) $\cdot 125$
 (2) $\cdot 5\frac{1}{2}$
 (3) $\cdot 05$; $\cdot 15$; $\cdot 2$; $\cdot 4$
 (4) 2·15 yards

P

- (1) 1,000
 (2) 1·125 days
 (3) 20 days
 (4) £13 2s. 6d.
 £9 7s. 6d.
 £4·375

Q

- (1) 298·25
 (2) 8 cwt. 0 qrs. 10 lbs. 10 oz.
 (3) 66 hours 40 minutes
 (4) £3 15s.

R

- (1) £200; £300; £450; £50
 (2) £20,000
 (3) £578
 (4) 10·054945 minutes

S

- (1) 7 $\frac{1}{2}$ minutes
 (2) 1 $\frac{1}{2}$ days
 (3) 1·6 days
 (4) $\frac{1}{2}$ past 1

T

- (1) 72 hours
 (2) 24 hours
 (3) $\cdot 0125$
 (4) £3 4s. 3d.

U

- (1) £30 18s. 8 $\frac{1}{2}$ d.
 (2) 13·13493
 (3) $\cdot 304$; 13·03125; $\cdot 0228571\frac{1}{4}$
 (a) 6,000; (b) 994·577
 (4) £405

V

- (1) $\cdot 001041\frac{1}{6}$
 £·014 by $\cdot 02d$.
 (2) £6,187 10s.
 (3) $\cdot 334847$ per cent.
 $\cdot 08086$ inches
 (4) 49·3 lbs.

W

- (1) 1,030 $\frac{1}{11}$
 (2) 300 flagstones
 (3) 2·40364583 days
 (4) (a) Not to recur, the denominator must
 be a power of 2, 5 or 10, or any
 multiple of these.
 (b) The fraction must be expressed in
 its lowest terms.

SIMPLE PROPORTION.

Ex. 98 (Pages 148-152).

- | | | | |
|---|--|---|--|
| <p>A</p> <p>(1) £360
(2) $86\frac{3}{4}$ days
(3) $172\frac{1}{2}$ days
(4) 120 horses</p> <p>E</p> <p>(1) $1s. 8\frac{1}{2}d.$
(2) $103\frac{1}{2}$ lbs.
(3) £401 3s. $11\frac{1}{2}d.$
(4) $1\frac{1}{2}d.$</p> <p>G</p> <p>(1) £75 17s. $7\frac{1}{2}d.$
(2) £2 7s. $7\frac{1}{2}d.$
(3) £1,225
(4) 19s. $6\frac{1}{2}d.$</p> <p>J</p> <p>(1) £858
(2) £1,082 16s. 8d.
(3) £16 11s. $4\frac{1}{2}d.$
(4) $8\frac{1}{2}d.$</p> <p>M</p> <p>(1) £4 15s. 7d.
(2) 223 turns
(3) $11\frac{1}{2}$ days
(4) 4,922 $\frac{1}{2}$ yards</p> | <p>B</p> <p>(1) 160 horses
(2) 144 horses
(3) £900
(4) 96 houses</p> <p>F</p> <p>(1) 5s. 3d. per lb.
(2) 154 yrs. 224 days 5 hrs. 46 min. $7\frac{1}{2}$ sec.
(3) £489 0s. $4\frac{1}{2}d.$
(4) 18 men</p> <p>H</p> <p>(1) 83 gal. 3 qts.
(2) 1 hr. $42\frac{1}{2}$ min.
(3) £66 10s. $9\frac{1}{2}d.$
(4) £105</p> <p>K</p> <p>(1) £698 2s. 6d.
(2) 2 years 110 days
(3) £13 14s. $4\frac{1}{2}d.$
(4) $41\frac{1}{2}$ days</p> <p>N</p> <p>(1) $175\frac{1}{2}$ yards
(2) £5 9s. 6d.
(3) 2 cwts. 3 qrs. 14 lbs.
(4) 10s.</p> | <p>C</p> <p>(1) £234
(2) £175
(3) 1 lb.
(4) £262 10s.</p> <p>I</p> <p>(1) 1s. 8d. per peck
(2) (a) £5 4s. 0d.
(b) $3\frac{1}{2}d.$
(3) 19,008 bricks
(4) £26 2s. 6d.</p> <p>L</p> <p>(1) £522
(2) £120 8s. 8d.
(3) $56\frac{1}{2}$ miles
(4) £11</p> <p>O</p> <p>(1) 12 hours
(2) £80 19s. 6d.
(3) 17 yds. 2 ft. $6\frac{1}{2}$ ins.
(4) (a) 20 minutes
(b) 39 miles</p> | <p>D</p> <p>(1) £82 2s. 8d.
(2) 1,082 hats
(3) £125
(4) £50</p> <p>S</p> <p>(1) £80 13s. 1-207875d.
(2) $\frac{1}{1000}$; .002475
(3) 18s.
(4) £80 19s. 11-9952d.</p> |
|---|--|---|--|
- P**
- (1) £4 16s.
(2) £46 13s. 4d.; £35; £28; £23 6s. 8d.; £20
(3) £4 6s. 6d.
(4) £22 15s. $3\frac{1}{2}d.$
- Q**
- (1) £98 18s. $2\frac{1}{2}d.$
(2) £236 8s. 6d.
(3) £13 3s. $1\frac{1}{2}d.$
(4) £367 10s.
- R**
- (1) £5 7s. 6d.
(2) 168 oranges
(3) 1-26 cwt.
(4) £10 6s. $5\frac{1}{2}d.$

COMPOUND PROPORTION.

Ex. 99 (Pages 153-158).

A	B	C	D
4 days	(1) £864	(1) 16 cwt.	(1) 3½ days
5½	(2) 126 days	(2) 48 acres	(2) 82½ lbs.
168	(3) 1½ weeks	(3) 12 days	(3) 27,648
15	(4) 1½	(4) £560	(4) 6,144
E	F	G	
1,152 yards	(1) 720 tons	(1) 5 days 20 hours	
81,000 bushels	(2) 12 days	(2) 86½ days	
64 weeks	(3) £36	(3) 3½ years	
£2,109 7s. 6d.	(4) 1½ hours	(4) 192	
H	I	J	K
10½ days	(1) 35½ days	(1) 7½ days	(1) 353½ miles
384	(2) 20 minutes	(2) 840 bundles	(2) 2½ days
27 pecks	(3) 18½ minutes	(3) 5¼ hours	(3) 86,000
30 weeks	(4) 888½ cups	(4) 6½ hours	(4) 66½ acres
L	M	N	
240 hours	(1) 44½ minutes	(1) 230,400	
4 pipes	(2) 234,000	(2) 60 days	
192 gallons	(3) 78½ hours	(3) £600	
11½ days	(4) 24 hours	(4) 86,400 gallons	
O	P	Q	R
30 days	(1) 28 days	(1) 6 hours	(1) 8 days
4 days	(2) 3½ days	(2) £170	(2) 5,400
66½ days	(3) 250,000	(3) 9½ hours	(3) 8½ days
½ days	(4) £9 10s. 3½d.	(4) £810	(4) 3½ days

S	T	U	V
(1) £52 10s.	(1) 462 lbs. sugar	(1) £3 2s. 6d.	(1) £3,250
(2) 6½ hours	154 lbs. tea	(2) 960 miles	(2) 5½ hours
(3) £466 13s. 4d.	(2) 121½ yards	(3) 133½ tons	(3) 12½ weeks
(4) 42 f, days	(3) 18 hours	(4) 600	(4) 100 days
	(4) 1,309½ days		
W		X	
(1) 3,200 lbs.		(1) 195,000	
(2) 150		(2) 67½ feet	
(3) 75 hours		(3) £1,062 10s.	
(4) 63 f, hours		(4) 10 weeks	

Ex. 100 (Pages 153, 159).

A	B	C
(1) 4 men	(1) 491½ yards	(1) £779 3s. 4d.
(2) 85 men	(2) 4½ candles	(2) 15 minutes
(3) 2½ days	(3) 5½ cwts.	(3) 4½ days
(4) 52½ ounces	(4) 10½ days	(4) 1½
D		E
(1) 1 bushel		(1) 80·12 acres
(2) 14½ hours		(2) 19·36 days
(3) £114 6s. 2d.		(3) £3 18s. 1½d.
(4) 8½ months		(4) 4·32 hours

SIMPLE INTEREST.

Ex. 101 (Page 160).

- A (1) £60; £80; £100; £120; £140; £160.
 (2) £75 4s. 2d.; £150 8s. 4d.; £188 0s. 5d.
 (3) £110 0s. 10d.; £330 2s. 6d.; £550 4s. 2d.
 (4) £383 4s. 2d.; £396 14s. 8d.; £405 15s.; £428 5s. 10d.;
 £450 16s. 8d.; £473 7s. 6d.

- B** (1) £950 18s. 9d.; £1,046 0s. 7½d.; £1,141 2s. 6d.;
 £1,236 4s. 4½d.; £1,014 6s. 8d.
 (2) £21 11s. 3d.; £28 15s.; £35 16s. 9d.; £43 2s. 6d.;
 £50 6s. 3d.; £3 16s. 8d.
 (3) 3½ per cent.
 (4) 4½ years.

- | C | D | E |
|--------------------|-----------------------|---------------------|
| (1) 4½ per cent. | (1) £4 16s. 3d. | (1) £80 15s. |
| (2) £244 12s. 9¾d. | (2) £82 19s. 1¼d. | (2) £1,792 5s. 7½d. |
| (3) £582 5s. 2¾d. | (3) Less by 6590625d. | (3) £107 18s. 8¾d. |
| (4) 2½ per cent. | (4) £684 16s. 0¼d. | (4) £572 10s. 4½d. |

ANSWERS.

COMPOUND INTEREST.

Ex. 102 (Page 161).

A	B	C
(1) £51 5s.	(1) £1,067 17s. 5 $\frac{1}{8}$ d.	(1) (a) £1 6s. 0 $\frac{3}{4}$ d.
(2) £141 17s. 3d.	(2) £1,019 8s. 11 $\frac{1}{8}$ d.	(b) £880 18s. 0-15d.
(3) £115 17s.	(3) £1,005 14s. 3 $\frac{1}{4}$ d.	(2) £48 1s. 6-432d.
(4) £172 2s. 4 $\frac{1}{2}$ d.	(4) £604 16s.	(3) £662 7s. 5-32512...d.
		(4) £1 11s. 9-9231d.
D	E	
(1) £1,086 3s. 0-45225d.	(1) £5 16s. 11d. nearly.	
(2) 12 $\frac{1}{2}$ per cent.	(2) 3 years.	
(3) 4 per cent.	(3) £840.	
(4) £700; 7 years.	(4) 3 years.	

DISCOUNT.

Ex. 103 (Pages 162, 163).

A	B	C
(1) £3 5s.	(1) £48 9s. 5 $\frac{1}{8}$ d.	(1) £4 16s. 11 $\frac{1}{8}$ d.
(2) £25 2s. 6d.	(2) £13 2s. 9 $\frac{3}{8}$ d.	(2) £33 8s. 6d.
(3) £68 5s.	(3) £2 5s. 8d.	(3) £1 6s. 3d.
(4) £53 15s. 9d.	(4) £61 17s. 6d.	(4) £14 4s. 2 $\frac{3}{8}$ d.
D	E	
(1) £49 10s. 4 $\frac{1}{8}$ d.	(1) 2s. 4 $\frac{1}{8}$ d.	
(2) £28 11s. 1d.	(2) £3 2s. 6d.; 10d.	
(3) £6 1s. 11d.	(3) 5 per cent.	
(4) 5s.	(4) 5 years.	
F		
(1) £3 7s. 9 $\frac{3}{8}$ d.		
(2) £1 1s. 5 $\frac{1}{8}$ d. - £1 1s. 3 $\frac{3}{8}$ d. = 1 $\frac{1}{8}$ d.		
(3) £16 14s. 7 $\frac{1}{8}$ d. - £16 8s. 4 $\frac{1}{8}$ d. = 6s. 3 $\frac{1}{8}$ d.		
(4) £353 10s.		

PRESENT WORTH.

Ex. 104 (Pages 163, 164).

A	B	C
(1) £780.	(1) £266 13s. 4d.	(1) £357 10s.
(2) £412 10s.	(2) £360.	(2) £27 18s. 4d.
(3) £150.	(3) £520 8s. 11 $\frac{1}{4}$ $\frac{1}{2}$ d.	(3) £385 7s. 8 $\frac{1}{2}$ $\frac{1}{4}$ $\frac{1}{2}$ d.
(4) £1,140.	(4) £133 6s. 8d.	(4) £239 11s. 11 $\frac{1}{4}$ $\frac{1}{2}$ $\frac{1}{4}$ d.
D	E	F
(1) £530.	(1) £177,000.	(1) £579 8s. 9d.
(2) £558 0s. 11 $\frac{1}{4}$ $\frac{1}{2}$ d.	(2) £227 10s.	(2) £1,332 10s.
(3) £1,200.	(3) £220.	(3) 6 per cent.
(4) £178 10s. 9 $\frac{1}{2}$ $\frac{1}{4}$ d.	(4) £987 10s. ; £987 13s. 1 $\frac{1}{4}$ $\frac{1}{2}$ d.	(4) 1 $\frac{1}{2}$ years.

STOCKS.

Ex. 105 (Pages 164-169).

A	B	C
(1) £6,400.	(1) £2,765.	(1) £70.
(2) £2,375.	(2) £1,940 2s. 6d.	(2) £23 8s. 9d.
(3) £333 6s. 8d.	(3) £8,458 13s. 9d.	(3) £179 2s.
(4) £8,000.	(4) £5,821 17s. 6d.	(4) £30.
D	E	F
(1) £7,360.	(1) £4 8s. 10 $\frac{1}{2}$ d.	(1) £1,500.
(2) £2,283 15s.	(2) £4 1s. 10 $\frac{1}{2}$ $\frac{1}{4}$ d.	(2) £141 16s. 6 $\frac{1}{4}$ $\frac{1}{2}$ d.
(3) £5,896 17s. 6d.	(3) £5 1s. 5 $\frac{1}{2}$ $\frac{1}{4}$ d.	(3) £1,500.
(4) £6,591 3s. 6 $\frac{1}{4}$ $\frac{1}{2}$ d.	(4) £4 11s. 0 $\frac{1}{2}$ $\frac{1}{4}$ d.	(4) £3,450.
G	H	I
(1) £8,376.	(1) £2,364 2s. 1d.	(1) £80 $\frac{1}{2}$.
(2) £8,200.	(2) £4,307.	(2) £7,147 13s. 9d.
(3) £168 1s. 4 $\frac{1}{4}$ $\frac{1}{2}$ d.	(3) £512 10s.	(3) £101 $\frac{1}{2}$.
(4) £12,800.	(4) £900; £45.	(4) £1 4s. 5 $\frac{1}{2}$ d.
J	K	L
(1) £2,666 13s. 4d.	(1) £60 gain.	(1) 11 $\frac{1}{4}$ $\frac{1}{2}$ $\frac{1}{4}$ d.
(2) £58 18s. 6 $\frac{1}{2}$ d.	(2) £84 $\frac{1}{2}$.	(2) 2 $\frac{1}{2}$ per cent.
(3) £11,620.	(3) £39 9s. 5 $\frac{1}{2}$ $\frac{1}{4}$ d.	(3) £6 2s. loss.
(4) £90.	(4) 5s. 4 $\frac{1}{4}$ $\frac{1}{2}$ d. per cent. decrease.	(4) £622 7s. 6 $\frac{1}{2}$ d.

M

- (1) No alteration. (2) £1,575.
 (2) £589 13s. 4d. (3) £14,520.
 (3) £192 10s.; £187 10s.; $\frac{7}{8}$. (4) £1,875; £5 12s. 6d. gain.
 (4) Railway stock; £1,237 10s. (5) £10 14s. 3 $\frac{1}{2}$ d.

N

O

- (1) £81 $\frac{1}{2}$. (2) £141 5s.; £47 11s. 7 $\frac{1}{2}$ d.
 (2) £6,154 10s. (3) £1,590.
 (3) £53 6s. 8d. (4) £43 15s.
 (4) £260. (5) £84 $\frac{1}{2}$.

P

Q

- (1) £13,397 10s.; £13,980. (2) £1,225; £17 10s.
 (2) £148 $\frac{1}{2}$. (3) £5,330.
 (3) 4 per cents.; £176 17s. 6d. (4) £142 16s. gain.
 (4) £106 $\frac{1}{2}$. (5) £5.

R

PROFIT AND LOSS.

Ex. 106 (Pages 169-174).

A

- (1) 1s. 0 $\frac{1}{2}$ d.
 (2) 33 $\frac{1}{2}$ per cent.
 (3) £11 11s. 9d.
 (4) 9 $\frac{1}{2}$ per cent.

B

- (1) £6 5s.
 (2) £75.
 (3) £225.
 (4) 3s. 1 $\frac{1}{2}$ d.; 8 percent.

C

- (1) 5 $\frac{1}{2}$ d.
 (2) 10 $\frac{1}{2}$ per cent.
 (3) 4s. 8 $\frac{1}{2}$ d.
 (4) £5.

D

- (1) 52 $\frac{1}{2}$ per ct. gain.
 (2) £4 5s. 6d.
 (3) 5s.
 (4) £1 1s. 9d.

E

- (1) 16 $\frac{1}{2}$ per cent. gain.
 (2) £4 5s. 3 $\frac{1}{2}$ d.
 (3) £8 2s. 2 $\frac{1}{2}$ d.
 (4) 16 $\frac{1}{2}$ per cent.

F

- (1) £3 7s. 6d. gain.
 (2) £1 0s. 2 $\frac{1}{2}$ d.
 (3) 240 copies.
 (4) £30 16s.; 9 $\frac{1}{2}$ per ct.

G

- (1) 15 $\frac{1}{8}$ per cent.
 (2) £105 8s. 4d.;
 £104 7s. 3d.

H

- (1) £21,666 13s. 4d.
 (2) 16 $\frac{1}{8}$ per cent.
 gain.

I

- (1) £27 10s.
 (2) 18 $\frac{1}{2}$ per cent.

- (3) (1) $\frac{1}{2}$ d.; (2) 20 per ct.
 (4) 4d.

- (3) 10 per cent.
 (4) £7,462.

- (3) £1 2s. 6d.
 (4) 5 $\frac{1}{2}$ per cent.

- | J | K | L |
|------------------------------------|---|--|
| (1) £705 10s. | (1) £75. | (1) 25 per cent. |
| (2) $6\frac{1}{2}$ per cent. loss. | (2) £1 12s. | (2) £625 8s. 4d. |
| (3) 9s. 2 $\frac{1}{2}$ d. | (3) $6\frac{2}{3}\frac{4}{5}$ per ct. loss. | (3) $28\frac{4}{5}\frac{7}{8}$ per cent. |
| (4) £980 2s. | (4) $2\frac{1}{2}$ per cent. gain. | (4) $2\frac{1}{2}$ per cent. loss. |
-
- | M | N |
|---|---|
| (1) £1 19s. 4d.; $21\frac{1}{2}\frac{2}{3}$ per cent. | (1) 45 per cent. |
| (2) $1\frac{1}{2}$ per cent. gain. | (2) 28 lbs. |
| (3) 8 per cent. gain. | (3) 1 lb. at 3s. to 2 lbs. at 3s. 6d. |
| (4) 50 per cent. | (4) 2 lbs. at 2s. 8d. to 13 lbs. at 3s. 6d. |
-
- | O | P | Q |
|-------------------------------------|-----------------|-----------------------------|
| (1) 5s. | (1) £3 17s. 6d. | (1) £60. |
| (2) $24\frac{1}{2}$ per cent. loss. | (2) £10. | (2) 1s. 10 $\frac{1}{2}$ d. |
| (3) £240 10s. | (3) £341. | (3) 7s. 4d.; 60 per cent. |
| (4) 1s. 8d. | (4) £189. | (4) Horse £71, cow £9. |

PERCENTAGES.

Ex. 107 (Pages 174-177).

- A (1) $\frac{1}{10}$, '02; $\frac{1}{100}$, '0075; $\frac{1}{10}$, '05; $\frac{1}{100}$, '09; $\frac{1}{4}$, '25;
 $\frac{1}{4}$, 1'25.
 (2) 50 per cent.; 25 per cent.; $12\frac{1}{2}$ per cent.; 10 per cent.;
 $7\frac{1}{2}$ per cent.; $1\frac{1}{2}$ per cent.; $1\frac{1}{4}$ per cent.; $\frac{1}{4}$ per cent.;
 $\frac{1}{8}$ per cent.; $\frac{1}{16}$ per cent.
 (3) 18'9; 66'15; 77'9625; 1'26.
 (4) $43\frac{1}{2}$ per cent.; 23 per cent.; $\frac{1}{2}$ per cent.
- B (1) $8\frac{1}{2}$ per cent.
 (2) $1\frac{1}{2}$ per cent.; 2 per cent.
 (3) 137,812'5.
 (4) A 10s. 6d., B 9s., C 7s., D 3s. 6d.
- C (1) £26,613 6s. 8d.
 (2) 40,841,010.
 (3) $3\frac{1}{2}$ per cent.
 (4) '004; $\frac{1}{2}$ per cent.
- D (1) 88 children.
 (2) $264\frac{1}{2}$ pints.
 (3) Nitrogen 717,715 gals., oxygen 181,700 gals.
 (4) Truancy $7\frac{1}{2}$ per cent., sickness $17\frac{1}{2}$ per cent.

- E** (1) 10,500 men.
 (2) Arithmetic 72 per cent., writing 80 per cent., reading 92 per cent.
 (3) Copper $59\frac{1}{2}$ per cent., tin $35\frac{1}{2}$ per cent., zinc 5 per cent.
 (4) 579 sheep.
- F** (1) 24·604... per cent.
 (2) Disease 765, old age 85, accidents 170, unknown causes 255.
 (3) £8 5s.
 (4) $7\frac{1}{4}$ per cent.
- G** (1) $3\frac{1}{4}$ per cent.
 (2) 4,875.
 (3) £82 10s.
 (4) £902,777 15s. 6 $\frac{1}{2}$ d.
- H** (1) $4\frac{1}{4}$ days more.
 (2) $52\frac{1}{8}$ per cent.
 (3) £475.
 (4) 5s. 6d.; 5s. 11 $\frac{1}{2}$ d.; 1 $\frac{1}{4}$ dwts.
- I** (1) 2·412... per cent.; 5·645... per cent.
 (2) 1,520 tons.
 (3) £8,205 12s.
 (4) 50,075.
- J** (1) 85.
 (2) $\frac{1}{2}$ d. each.
 (3) £280 4s. 2 $\frac{1}{2}$ d.
 (4) West Riding, by 6·49 (nearly) per cent.
- K** (1) $93\frac{1}{2}$ per cent.
 (2) £447 6s. 8d.
 (3) 426,240 (89·8...).
 (4) 211,140.

 PROPORTIONAL PARTS.

Ex. 108 (Pages 178-180).

- A** (1) 1,122 and 1,734.
 (2) £1 12s. 4d.; £2 8s. 6d.; £3 12s. 9d.; £4 17s.; £6 9s. 4d.
 (3) A £2,020 16s. 8d.; B £1,625; C £1,354 8s. 4d.
 (4) £220 16s. 8d.; £191 13s. 4d.; £300; £287 10s.

- B (1) 3s. 6d.; 2s. 11d.; 2s. 6d.: 2s. 2½d.
 (2) A £179 8s. 8d.; B £142 9s.; C £99 3s. 4d.
 (3) A £5 15s. 6d.; B £1 11s. 6d.
 (4) £12 2s. 6d.; £9 17s. 6d.; £12 10s.
- C (1) 19s. 5½d.; 9s. 8¼d.; 4s. 10¾d.
 (2) A £5,000; B £3,750; C £3,125.
 (3) £825; £450; 20 per cent.
 (4) £265.
- D (1) £11 5s.; £15 15s.
 (2) A £750; B £400.
 (3) A £11 7s. 6d.; B £15 15s.; C £8 5s.
 (4) D £84 3s. 8¾¾d.; G £265 16s. 3¾¾d.
- E (1) £11 5s.; £20; £29 5s.
 (2) A £769 4s. 7⅞d.; £461 10s. 9⅞d.; C £769 4s. 7⅞d.
 (3) A £626 6s. 10½d.; B £556 15s.
 (4) A £102; B £104; C 78.
- F (1) 10s. 6d.; A £123 7s. 6d.; B £170 12s. 6d.; C £275 12s. 6d.
 (2) £3 10s.; £28; £94 10s.; £224.
 (3) A £51 12s.; B £81.
 (4) A £36; B £12; C £16.
- G (1) Son £1,644 7s. 6d. wife £548 2s. 6d.; daughter
 £182 14s. 2d.
 (2) A £4,615 7s. 8⅞d.; B £3,076 18s. 5⅞d.; C £2,307
 18s. 10⅞d.
 (3) A 6s.; B 10s.; C 5s.
 (4) A £75; B £40.
- H (1) A 2s. 9¾d.; B 3s. 7¼d.; C 10¼^u. D 9s. 1½d.
 (2) A £384; B £336; C £280.
 (3) £2,367 15s. 9d.
 (4) A £94 10s.; B £168; C £396.

AVERAGES.

Ex. 109 (Pages 180-182).

- | | | | |
|---|---------------------|---|-------------------------------|
| A | (1) 26⅞. | B | (1) £1,673 6s. 6d. |
| | (2) 19·72 per cent. | | (2) 1,541. |
| | (3) 4s. 0¾d. | | (3) 12,535 tons 14cwt. 32lbs. |
| | (4) £49; the first. | | (4) 9s. 9⅞d. |

- C (1) 1s. 9½d. D (1) £2 4s.
 (2) 13·48 years. (2) 24½ yards; 4s.
 (3) £2. (3) 3·06 days.
 (4) 14s. 2d. (4) £340 1s. 8½d.
- E (1) 5 ft. 7½ in.; 80½ per cent. F (1) £262 13s. 9d.
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S Q U A R E R O O T .

Ex. 110 (Page 183).

A	B	C	D	E	F
(1) 12	(1) 42	(1) 101	(1) 225	(1) 522	(1) 725
(2) 16	(2) 53	(2) 110	(2) 307	(2) 553	(2) 832
(3) 17	(3) 62	(3) 121	(3) 304	(3) 555	(3) 888
(4) 21	(4) 75	(4) 125	(4) 315	(4) 327	(4) 910
(5) 25	(5) 84	(5) 131	(5) 420	(5) 645	(5) 3,401
(6) 31	(6) 95	(6) 215	(6) 433	(6) 666	(6) 3,020

G	H	I	J	K	L
(1) ·01	(1) ·11	(1) ·001	(1) ·042	(1) ·017	(1) ·0019
(2) ·03	(2) ·22	(2) ·012	(2) ·009	(2) ·019	(2) ·0101
(3) ·05	(3) ·33	(3) ·011	(3) ·051	(3) ·0016	(3) ·0202
(4) ·07	(4) ·44	(4) ·002	(4) ·061	(4) ·0009	(4) ·0505
(5) ·09	(5) ·55	(5) ·021	(5) ·034	(5) ·0007	(5) 3·001
(6) ·1	(6) ·66	(6) ·031	(6) ·035	(6) ·0017	(6) 4·002

M	N	O
(1) ½; 3½; 1½; ½; 4½. (1) 3·332 feet. (1) 4 minutes.		
(2) ·8944...; 2·8535...; (2) 85 inches. (2) ½ mile.		
·0316...; 5·6692...		
(3) 209 ft. 3 in. (3) 2·7 per cent. (3) 6 seconds.		
(4) ¾. (4) 207 members. (4) 9 yds.; 36 yds.		

CUBE ROOT.

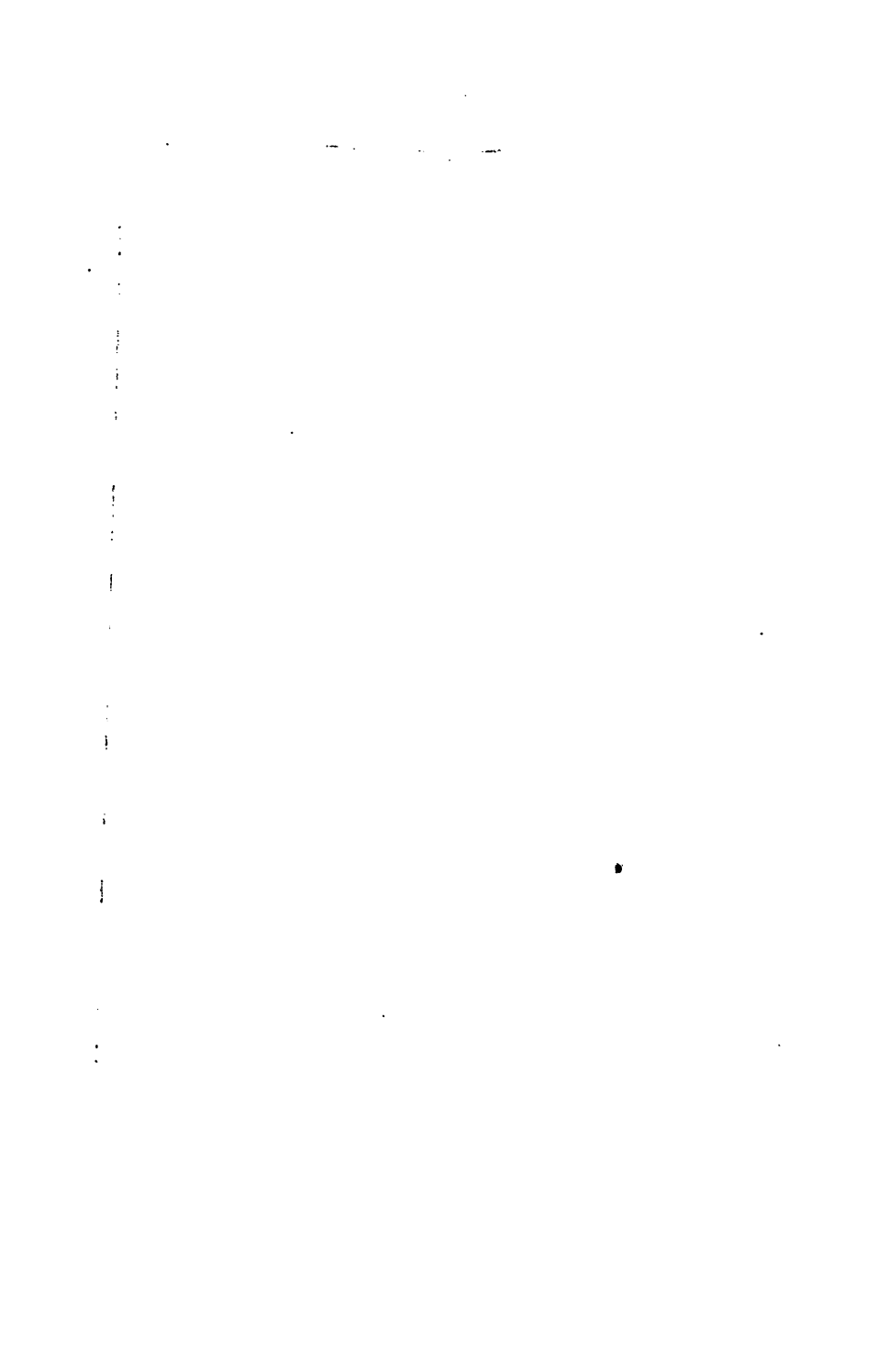
Ex. 111 (Page 184).

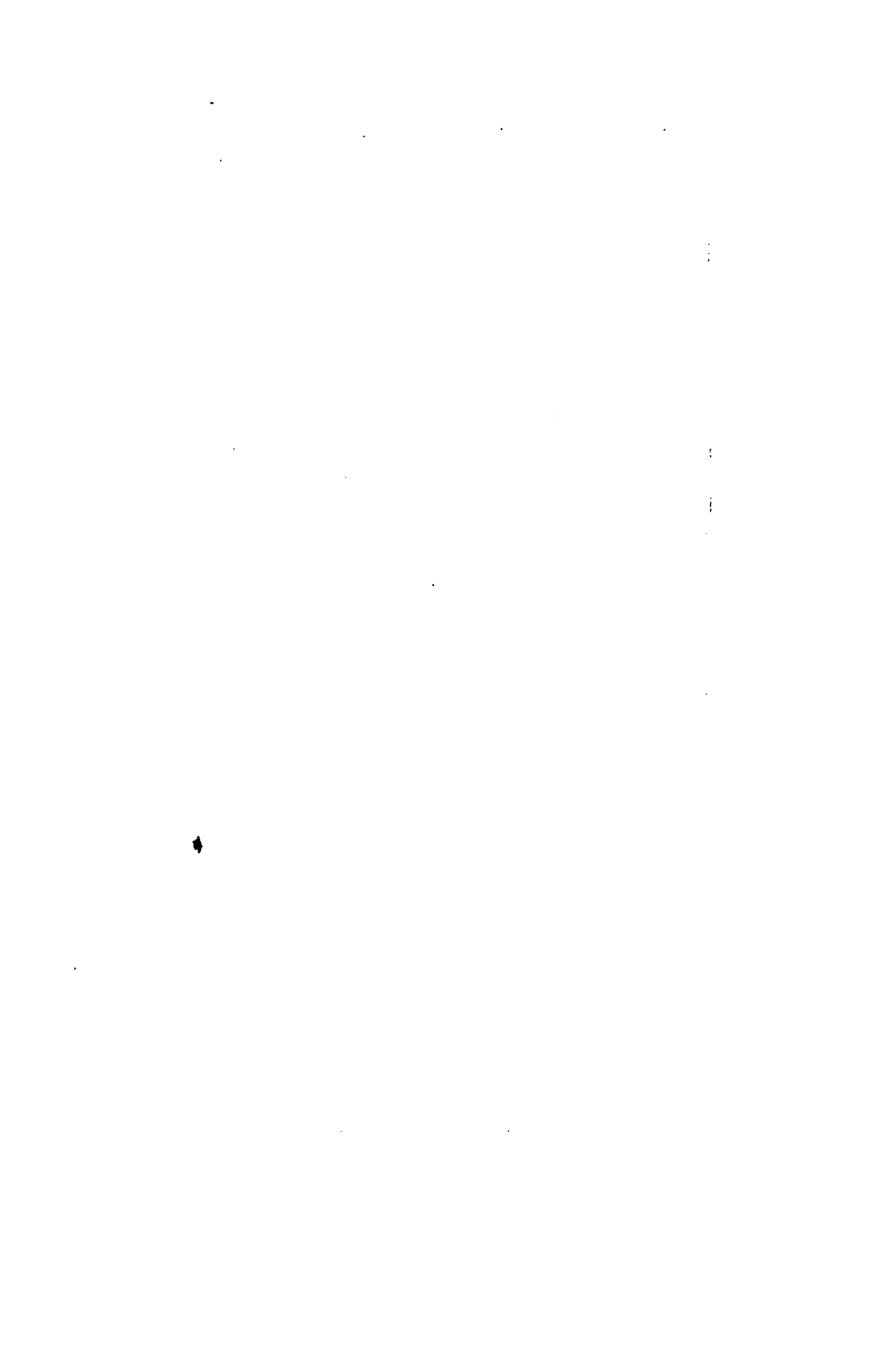
A	B	C	D	E	F
(1) 5	(1) 19	(1) 54	(1) 43	(1) 81	(1) 95
(2) 9	(2) 21	(2) 53	(2) 29	(2) 83	(2) 106
(3) 11	(3) 25	(3) 67	(3) 72	(3) 85	(3) 120
(4) 13	(4) 27	(4) 61	(4) 65	(4) 87	(4) 212
(5) 15	(5) 31	(5) 35	(5) 76	(5) 89	(5) 304
(6) 17	(6) 32	(6) 28	(6) 37	(6) 93	(6) 520

G	H	I	J	K	L
(1) .03	(1) 1.1	(1) .41	(1) .63	(1) .001	(1) 20.1
(2) .05	(2) 1.2	(2) 4.5	(2) .75	(2) .00494+	(2) 3.02
(3) .4	(3) 1.4	(3) .52	(3) .42	(3) .012	(3) 4.11
(4) .7	(4) 1.3	(4) 2.5	(4) .83	(4) 1.01	(4) 305
(5) .07	(5) 2.1	(5) 3.4	(5) .91	(5) 1.12	(5) 512
(6) .011	(6) 3.1	(6) 5.7	(6) .95	(6) 11.1	(6) 60.7

M	N
(1) $1\frac{1}{2}$; $3\frac{1}{2}$; .83.	(1) .92353.
(2) .721...; 1.601...; .039...; 2.593...	(2) $24\frac{1}{2}$ inches.
(3) 58.2 inches.	(3) 8.819... feet.
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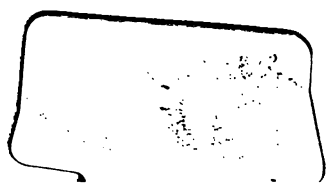
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